Registered at the G.P.O. for Transmission to Canada by Magazine Post.

VOL. 46. Ser. A. Title-page and Index. [Issued June, 1960]

THE REVIEW OF APPLIED ENTOMOLOGY

SERIES A: AGRICULTURAL

ISSUED BY THE COMMONWEALTH INSTITUTE OF ENTOMOLOGY

LONDON:
COMMONWEALTH INSTITUTE OF ENTOMOLOGY,
56, QUEEN'S GATE, S.W.7

Price 10s. net

Commonwealth Agricultural Bureaux

EXECUTIVE COUNCIL

A. PERERA, *Chairman*, Ceylon.

C. K. REHEEM, *Vice-Chairman*, Pakistan.

W. G. ALEXANDER, C.B.E., United Kingdom.

J. G. MALLOCH, M.B.E., Ph.D., Canada.

E. J. DRAKE, Australia.

V. ARMSTRONG, Ph.D., New Zealand.

J. F. BROOKS, Union of South Africa.

S. KRISHNAMURTI, India.

W. W. K. VANDERPUYE, Ghana.

J. D. DE SILVA, Federation of Malaya.

J. E. C. COVENTRY, Federation of Rhodesia and Nyasaland.

C. E. LAMBERT, C.M.G., Colonial Territories.

Sir HERBERT HOWARD, *Secretary*, Farnham House, Farnham Royal, Nr. Slough, Bucks.

COMMONWEALTH INSTITUTE OF ENTOMOLOGY

Director and Editor
E. O. PEARSON, M.A.

Assistant Director
R. G. FENNAH, M.A.

Assistant Editor
R. F. AVERY, M.A.

Head Office—c/o British Museum (Natural History), Cromwell Road, London, S.W.7

Publication Office and Library—56, Queen's Gate, London, S.W.7

© *Commonwealth Agricultural Bureaux, 1960*

INDEX OF AUTHORS

A reference in heavy type indicates that a paper by the author has been noticed.

Abbas, H. M., **72.**
Abedi, Z. H., **422.**
Abul-Nasr, S., **27.**
Adachi, M., **36.**
Adams, J. A., **494.**
Adkisson, P. L., **121.**
Agrawal, N. S., **442.**
Aguilar, J. d', **38, 205, 283, 397.**
Aizawa, K., **37.**
Albrecht, F. O., **83, 252.**
Alfaro Moreno, A., **77.**
Allen, H. W., **93.**
Allen, W. W., **441.**
Almeida, P. R. de, **499.**
Amaral, S. Franco do, **453.**
Ananda Rau, S., **113.**
Anderson, L. D., **383.**
Anderson, N. H., **480.**
Andersson, H., **243.**
Andrade, A. C., **500.**
Andrewartha, H. G., 392, 393.
Andrews, J. E., **388.**
Angeles, N., **453.**
Anthon, E. W., **428.**
App, B. A., **229.**
Apple, J. W., **91, 93.**
Arant, F. S., **58, 216.**
Arbuthnot, K. D., **100, 219.**
Areekul, S., **351.**
Armitage, H. M., **188.**
Armstrong, M. T., **242.**
Arnold, E. W., **93.**
Arnold, J. W., **344.**
Arnol'di, K. V., **10.**
Asahina, S., **37.**
Asket Singh, **363.**
Asquith, D., **448.**
Atkins jr., E. L., **95, 383.**
Attafuah, A., **210, 211.**
Attiah, H. H., **28.**
Aubin, **77.**
Auclair, J. L., **484.**
Ausland, O., **36.**
Austin, G. D., **113.**
Autuori, M., **454.**
Avidov, Z., **418.**
Bachmann, F., 14.
Backlund, H. O., **369.**
Backs, R. H., **316.**
Bagal, S. R., **472.**
Baggiolini, M., **5, 77, 205.**
Bailey, S. W., **239.**
Baker, E. A., **509.**
Baker, E. W., 261.
Bakke, A., **320.**
Balch, R. E., **255.**
Baldwin, W. F., **331, 485.**
Ball, H. J., **175.**
Banaag, A. F., **154.**
Banham, F. L., **387.**
Banks, C. J., **306.**
Bann, J. M., **99.**
Bardner, R., **42.**
Barnes, H. F., **413.**
Baron, R. L., **227.**
Barter, G. W., **269.**
Basavanna, G. P. Channa, **297.**
Basio, D. G., **106.**
Bates, J. F., **356.**
Batt, R. F., **509.**
Batzer, H. O., **347.**
Beal jr., R. S., **262.**
Bean, J. L., **347.**
Beard, R. L., **191.**
Beardsley, J. W., **173.**
Beaulieu, A. A., **483.**
Beck, S. D., **262, 311, 382, 436, 458.**
Beckham, C. M., **14.**
Bedford, E. C. G., **251.**
Begg, J. A., **130, 423.**
Behura, B. K., **82, 163, 345.**
Beingolea G., O., **136.**
Benard, R., **397.**
Bengston, M., **478.**
Bennett, C. W., **331.**
Bennett, F. D., **268.**
Benson, R. B., **302.**
Berg, G. H., **121.**
Bergman, B. H. H., **477.**
Bergold, G. H., **455.**
Bess, H. A., **446, 507.**

Bessard, A., **205, 397.**
Bevan, D., **142.**
Bezant, E. T., **149.**
Bhambhani, H. J., **170.**
Bhatia, D. R., **471.**
Bibby, F. F., **100.**
Bielarski, R. V., **346.**
Bierman-Pauw, E., **330.**
Bigger, J. H., **449.**
Biliotti, E., **283.**
Bindra, O. S., **474.**
Birch, L. C., 208, 392, 393.
Bird, F. T., **485, 497.**
Bishay, F., **506.**
Bissell, T. L., **14.**
Blache, M., **6.**
Blackburn, N. D., **428.**
Blackith, R. E., **170, 324.**
Blakeley, P. E., **316.**
Blanchard, R. A., **449.**
Blankwaardt, H. F. H., **284.**
Blew jr., J. O., **199.**
Blewett, M., 173.
Blinn, R. C., **348.**
Błońska, A., **328.**
Bobb, M. L., **219.**
Bocharova, O. M., **8, 10.**
Bogdanov, V., **328.**
Boieldieu, A., 357.
Bollow, H., **329.**
Bond, E. J., **313.**
Bonhag, P. F., **255.**
Borden, A. D., **281.**
Bosch, R. van den, **230, 437.**
Boudreaux, H. B., **261.**
Bournier, A., **6.**
Boush, G. M., **55.**
Bovey, R., **470.**
Bowden, J., 152.
Bowling, C. C., **341.**
Box, H. E., **355.**
Boyle, W. W., **74, 103.**
Braak, J. P., **196.**
Bradley, J. D., **166, 409.**
Bradley, R. H. E., **155.**
Braithwaite, B. M., **322.**
Brandt, H., **2.**
Brazzel, J. R., **57, 174, 343, 435, 490.**
Breny, R., **404.**
Brett, G. A., 416.
Briceño, S. H. Risco, **500, 501.**
Briggs, A. R. Mead-, **82.**
Brimblecombe, A. R., **158, 240.**
Brindley, T. A., **56, 94, 439.**
Brion, L., **151.**
Britton, E. B., **106.**
Broadbent, L., **143, 147.**
Brookes, R. F., **271, 380.**
Brooks, G. N., **228.**
Brooks, J. S., **219.**
Brooks, M. A., **255.**
Brown, E. S., **300, 412.**
Brown, N. R., **12, 266.**
Brown, W. J., 333.
Browne, L. B., **358.**
Bruhn, J. F. Carbonell, **406.**
Brunink, H., **134.**
Bruniquel, S., **366.**
Brunson, M. H., **237.**
Buckland, C. T., **132.**
Bugdanov, G. B., **360.**
Bull, J. O., **64, 172.**
Bünzli, G. H., **166, 408.**
Burges, H. D., **64.**
Burgess, A. H., **114.**
Burkhardt, C. C., **235, 351, 425.**
Burks, B. D., **136.**
Busvine, J. R., **23.**
Butani, D. K., **163.**
Butler, F. C., **31.**
Butovitsch, V., **141.**
Büttiker, W. W. G., **166, 298, 408.**
Buzanov, I. F., **80.**

Cachan, P., **274.**
Cagle, L. R., **260.**
Calaby, J. H., **357.**
Callahan, P. S., **385, 490.**
Calora, F. B., **34.**
Caltagirone Z., L., **357.**
Čamprag, D., **288.**
Carbonell Bruhn, J. F., **406.**
Carlson, E. C., **281.**
Carne, P. B., **376.**
Carnegie, A. J. M., **149, 299.**
Carroll, W. J., **128.**
Carter, R. H., **99, 229.**
Carter, Walter, **112.**
Cartier, J. J., **102.**
Carvalho, J. C. M., **36.**
Cascio, T., **343.**
Casida, J. E., **231.**
Casimir, M., **411.**
Caswell, G. H., **212.**
Cats, V. de Meester-Manger, **454, 455.**
Cayrol, R., **205.**
Cendaña, S. M., **106.**

Chaboussou, F., **138, 139.**
Chamberlin, F. S., **404.**
Chancogne, M., **38.**
Channa Basavanna, G. P., **297.**
Chatterjee, S., **471.**
Chemsak, J. A., **355.**
Chen, H. H., **432.**
Choudhuri, J. S. B., **253.**
Christensen, C. M., **442.**
Christenson, L. D., **349.**
Chrzanowski, J., **80.**
Cinq-Mars, L., **85.**
Clark, E. C., **125.**
Clark, E. W., **61.**
Clark, J. C., **348.**
Clark, N. G., **271, 380.**
Clark, P. J., **33.**
Clark, R. C., **12, 266.**
Clarke, K. U., **83.**
Clausen, C. P., **255.**
Clower, D. F., **344, 346.**
Coaker, T. H., **43.**
Cockbain, A. J., **148.**
Cohic, F., **158, 278.**
Colless, D. H., **196.**
Collins, D. L., **126.**
Colyer, C. N., **81.**
Compere, H., 268.
Complin, J. O., **224.**
Compton, L. M., **488.**
Connin, R. V., **179.**
Connola, D. P., **126, 488.**
Cook, W. C., **309.**
Cornwell, P. B., **417.**
Cory, E. N., **96.**
Costa, A. S., **497.**
Cotton, R. T., **508.**
Coulon, J., **7, 38.**
Couturier, A., **138, 206.**
Cowan jr., C. B., **51, 91, 435, 440, 443, 445.**
Cox, G. A., **392.**
Cox, H. C., **56, 94.**
Cox, J. A., **342.**
Craig, R., **508.**
Crall, J. M., **494.**
Cranham, J. E., **271, 324, 380.**
Cressman, A. W., **433.**
Crête, R., **85.**
Crooke, M., **142, 361.**
Cumber, R. A., **157.**
Cummings, W. A. W., **380.**
Cuthbert jr., F. P., **60, 63.**
Cutler, J. R., **273.**
Cutright, C. R., **260.**
Cvijović, M., **329.**

d'Aguilar, J., **38, 205, 283, 397.**
Dahm, P. A., **346.**
Dahms, R. G., **178, 341.**
Dale, W. T., **210, 211.**
Darling, H. S., **115.**
Darling, R. C. Maxwell, **501, 502.**
Das, G. M., **114.**
Davey, P. M., **304.**
Daviault, L., **85.**
Davich, T. B., **99.**
David, W. A. L., **255.**
Davis, D. F., **353.**
Davis, J. M., **218.**
Davis, J. W., **51, 91, 435, 440, 443, 445.**
Deal, A. S., **95, 383.**
de Almeida, P. R., **499.**
Dean, F. P., **89.**
Dean, H. A., **310.**
Deane, B. C., **313.**
DeBach, P., **263.**
DeCino, T. J., **99.**
de Fluiter, H. J., **330.**
Delamar, C. D., **225.**
DeLong, B., **133.**
DeLong, D. M., 310.
De Lotto, G., **299.**
de Luca, Y., **111.**
de Meester-Manger Cats, V., **454, 455.**
DePew, L. J., **187, 440.**
Deputy, O. D., **73.**
Derbyshire, D. M., **115.**
Descamps, M., **29, 110, 365.**
de Silva, D. M., **497.**
Despotović, P., **5.**
Dewey, J. E., **508.**
Díaz C., H., **453.**
Dickson, R. C., **16.**
Dietrick, E. J., **437.**
Diklić, V., **287.**
Dinther, J. B. M. van, **318, 406.**
Ditman, J. L., **236.**
Ditman, L. P., **184, 226, 236.**
Djojopranoto, A., **159, 318.**
Doane, J. F., **191.**
Dobson, R. C., **177.**
Dobson, R. M., **66, 118, 169.**
Dominick, C. B., **223.**
Donald, R. G., **163, 212, 254.**
Doolittle, S. P., 16.

Dorsey, C. K., **187.**
Dosse, G., **203, 402.**
Doucette, C. F., **235.**
Douglas, W. A., **122.**
Douglass, J. R., **122, 426.**
Doull, K. M., **257.**
Doutt, R. L., **237.**
Downes, J. A., **255.**
Doyle, E. S., **345.**
Drake, C. J., **357.**
Drees, H., **2.**
Drooz, A. T., **183, 391.**
Duda, E. J., **185.**
Dudley jr., J. E., **50.**
Duerden, J. C., **150, 273.**
Duffus, J. E., **497.**
Dumbleton, L. J., **155.**
Dunn, P. H., **86, 124, 491.**
Dupree, M., **14.**
Důrasová-Janů, M., **320.**
Dürr, H. J. R., **251.**
Dustan, G. G., **22.**

Eady, R. D., 117.
Earle, N. W., **99.**
Eastop, V. F., **213.**
Eaton, C. B., **384.**
Ebeling, W., **447.**
Eckhardt, R. C., **122.**
Édel'man, N. M., **68.**
Eden, W. G., **55.**
Edwards, C. A., **436.**
Ehara, S., **152.**
Ehlers, M., **203.**
Ehrenhardt, H., **204.**
Eldin, F. Nour-, **506.**
Elgee, D. E., **485.**
Ellingboe, A. H., **180.**
Elliott, L. M., **348.**
Elmer, H. S., **429.**
El-Sawaf, S. K., **24.**
Ely, R. E., **229.**
El-Ziady, S., **306.**
Emsley, M. G., **368.**
Endrigkeit, A., **401.**
English, L. L., **177.**
Ensslin, W., **246.**
Entwistle, P. F., **211.**
Ergle, D. R., **108.**
Ernst, E., **459.**
Erwin, W. R., **281.**
Essig, E. O., **406.**
Evans, W. G., **62, 220.**
Eyndhoven, G. L. van, **318.**
Eyssell, B. J., **410.**
Ezzatt, Y. M., **27.**

Fahey, J. E., **54, 56, 94, 232, 234.**
Fahmy, I., **28.**
Farstad, C. W., **21.**
Fay, R. W., **255.**
Fedotov, D. M., **8, 10.**
Fernández, A., **498.**
Fernando, H. E., **30, 112.**
Fife, L. C., **440.**
Finkenbrink, W., **141.**
Finlayson, D. G., **389.**
Finnegan, R. J., **483.**
Fisher, T. W., **263.**
Fisk, F. W., **508.**
Fjelddalen, J., **37.**
Flanders, S. E., **179.**
Fleschner, C. A., **186, 224.**
Flock, R. A., **16.**
Floyd, E. H., **47, 49.**
Fluiter, H. J. de, **330.**
Flynn, J. E., **227.**
Foley, F. B., **178.**
Forbes, A. R., **98, 270.**
Forster, I. W., **373.**
Forsyth, J., **273.**
Forte, P. N., **32.**
Foster, R., **415.**
Foucart, G., **151.**
Fowler, H. D., **108.**
Fox, C. J. S., **11, 483.**
Fraenkel, G., 173.
Franco do Amaral, S., **453.**
Frankenfeld, J. C., 39.
Fransen, J. J., **330.**
Franssen, C. J. H., **329, 331.**
Franz, J., **140, 459.**
Frazier, N. W., **145,** 470.
Frediani, D., **362.**
Freitag, J. H., **15, 17.**
Frézal, P., **206.**
Frick, K. E., **217, 348, 431.**
Friend, A. H., **374.**
Friend, W. G., **255.**
Frings, H., **233, 255.**
Frings, M., **233, 255.**
Fröhlich, G., **401.**
Frost jr., M. H., **95, 383.**
Frost, S. W., **223.**
Fry, P. R., **256.**
Fujita, S., **476.**
Fukumi, H., **37.**
Fukushi, T., **35.**

Fukuto, T. R., **46, 182, 228, 336, 423.**
Fye, R. E., **450.**

Gaines, J. C., **57, 435.**
Gaines, R. C., **343.**
Galichet, P. F., **408.**
Gambrell, F. L., **76.**
Gardiner, L. M., **481.**
Gardner, J. C. M., **240.**
Gay, F. J., **357, 479.**
Geering, Q. A., **43.**
Geier, P., **293.**
Genderen, H. van, **329.**
George, J. A., **388.**
Georghiou, G. P., **24.**
Gérard, J. L., **38.**
Gerberg, E. J., **334.**
Gérin, L., **506.**
Gersdorf, E., **194.**
Gertler, S. I., **353.**
Giannotti, O., **499.**
Gibson, A. L., **218.**
Gibson, K. E., **309, 426.**
Gibson, W. W., **312.**
Giglioli, E. G., 120.
Gilmer, R. M., **76.**
Glass, E. H., **445.**
Glasscock, H. H., **115.**
Glen, R., **76.**
Godan, D., **245.**
Godwin, P. A., **218, 335.**
Gojmerac, W. L., **123, 280.**
Gokan, N., **476.**
Goldheim, S. L., **334.**
González B., J. E., **454.**
Goodman, A., **109, 368.**
Gorzycki, L. J., **449.**
Gould, E., **101.**
Gould, G. E., **350.**
Gradojević, Z., **4.**
Graham, K., **265.**
Gratwick, M., **41.**
Gray, H. E., 64.
Greaves, T., **32, 479.**
Green, A. H., **300.**
Green, G. W., **485.**
Greenbank, D. O., **314.**
Greenwood, D., **271, 380.**
Gressitt, J. L., **36, 255.**
Griffin, J. A., **61, 346.**
Griffin, L. A. M., **373.**
Grossman, R. M., **446.**
Grylls, N. E., **31.**
Guagliumi, P., **452.**
Guérin-Méneville, F. E., 409.
Guido, A. Silveira, **406.**
Gunn, D. L., **301, 410.**
Gunther, F. A., **348.**
Gupta, D. S., **160, 471.**
Gupta, V. K., **324.**
Gurr, L., **372, 479.**
Gusse, J. F., **138.**
Guthrie, F. E., **54, 217, 227.**
Guyer, G. E., **259, 434.**
Györfi, J., **67.**
Gyrisco, G. G., **62, 220, 229, 255.**

Habib, A., **25.**
Hacskaylo, J., **108, 222, 348.**
Hafez, M., **26.**
Haine, E., **148.**
Haisley, K., **434.**
Halffter, G., **278.**
Hall, D. G., **255.**
Hall, I. M., **86, 124, 427, 491.**
Hall, J. A., **131.**
Hall, W. J., **507.**
Hallock, H. C., **122.**
Hamilton, D. W., **58, 232, 234.**
Hammad, S. M., **24.**
Hammond, P. S., **209, 254.**
Hampson, G. F., 172, 365.
Hamstead, E. O., **101.**
Handford, R. H., **387.**
Hansen, H. L., **187.**
Haque, H., **72.**
Haramoto, F. H., **74.**
Harcourt, D. G., **192.**
Hardon, H. J., **134.**
Hardy, D. E., **36.**
Harries, F. H., **174.**
Harris, W. V., **503.**
Harrison, F. P., **226.**
Hartzell, A., **259.**
Harvey, T. L., **440.**
Harwood, R. F., **351, 450.**
Hassall, K. A., **207.**
Hassan, A. S., **26.**
Hassanein, M. H., **28.**
Hastings, A. R., **62.**
Hatai, N., **322.**
Haws, B. A., **180.**
Hay, C. J., **263.**
Heathcote, G. D., **147, 300.**
Heddergott, H., **195.**
Hedlin, A. F., **188, 189, 267.**
Heering, H., **247.**

Heie, O., **79, 405.**
Heikinheimo, O., **405.**
Hensley, S. D., **100.**
Heqvist, K. J., **142.**
Herbert, H. J., **267.**
Hering, E. M., **76.**
Hetrick, L. A., **225, 264.**
Hewitt, J. S., **504.**
Hewlett, P. S., **171.**
Higgons, D. J., 134.
Highland, H. A., **96.**
Hikichi, A., **131.**
Hill, A. R., **405.**
Hill, C. H., **487.**
Hill, E. G., **242.**
Hinreiner, E., **281.**
Hinton, H. E., **255.**
Hiura, I., **276.**
Hobbs, G. A., **190.**
Hodgson, E. S., **255.**
Hodson, A. C., **442.**
Holborn, J. M., **133.**
Holdaway, F. G., **479.**
Hollings, M., **146.**
Holloway, J. K., **347.**
Holmes, N. D., **21, 482, 484.**
Hooper, G. H. S., **259.**
Hopkins, A. R., **450.**
Hoskins, W. M., **281, 508.**
Hough, W. S., **447, 487.**
Howe, R. W., **42, 64, 237, 240,** 416.
Howe, W. L., **226.**
Howitt, A. J., **123.**
Howland, A. F., **50, 176, 451.**
Hoyt, C. P., 155.
Hoyt, S. C., **222, 336.**
Hubbeling, N., **330.**
Huffaker, C. B., **311, 347, 509.**
Huffman, J. W., **355.**
Hughes, A. M., 287.
Hughes, J. C., 41.
Hughes, K. M., **86, 386.**
Hunt, G. M., **198.**
Hůrka, K., **401.**
Hurpin, B., **7.**
Husman, C. N., **449.**
Husseine, K. K., **507.**
Husson, R., **78.**
Hutton, E. M., **31.**

Iizima, N., **423.**
Illankoon, R. L., **113.**
Illiger, K., 357.
Ingram, J. W., **426.**
Ingram, W. R., **303.**
Inouye, H., **422.**
Ishikura, H., **321.**
Issekutz, L., **457.**
Ivy, E. E., **449.**

Jacks, H., **33, 256.**
Jacobson, L. A., **316.**
Jahn, E., **498.**
Janson, H. W., **156.**
Janů, M. Důrasová-, **320.**
Janvier, H., **279.**
Järnhäll, B., **362.**
Jaynes, H. A., **218, 335.**
Jenkins, C. F. H., **33.**
Jensen, D. D., **444, 491, 496.**
Jeppson, L. R., **95, 224, 429.**
Jesser, M. J., **224.**
Jewell, F. F., **17.**
Joffe, A., **298.**
Johansson, M. P., **442.**
Johansson, T. S. K., **442.**
Johnson, C. G., **144, 148.**
Johnson, G. V., **94.**
Johnson, J. A., **446.**
Johnson, J. C., **74.**
Johnson, M. McD., **16.**
Johnston, A. M., **380.**
Johnston, H. R., **199.**
Jolly, G. M., 250.
Jones, E. T., **446.**
Jones, E. W., **309.**
Jones, F. G. W., **196.**
Jones, L. W., **156.**
Jones, P. A., **486.**
Jones, T. Palmer-, **373.**
Jotwani, M. G., **470.**
Jourdheuil, P., **283.**
Judenko, E., **113.**
Juvin, P., **456.**

Kabachnik, M. I., **285.**
Kadkol, S. B., **208.**
Kalkat, G. S., **162.**
Kalshoven, L. G. E., **319.**
Kaltenbach, A., **199.**
Kamano, S., **422.**
Kanervo, V., **405.**
Kantack, B. H., **352.**
Kantack, E. J., **49, 178.**
Karaman, Z., **397.**
Karlin, E. J., **94.**
Karpova, A. I., **80.**

Kaufman, W., **221.**
Kelsey, J. M., **359, 360.**
Kenaga, E. E., **45, 88.**
Kennedy, J. S., **306, 360.**
Kennett, C. E., **311.**
Kenten, J., **42.**
Kern, F., **453.**
Kernkamp, M. F., **180.**
Kerr, S. H., **490.**
Kerr, T. W., **220, 236.**
Kerrich, G. J., **110.**
Kerssen, M. C., **330.**
Kerur, D., **435.**
Khan, M. Q., **473.**
Khan, M. S., **72.**
Khan, N. H., **422.**
Kho, Y. O., **196.**
Khristova, E., **328.**
Kilbey, D. W., 134.
Kilpatrick, J. W., **255.**
Kimura, N., **322.**
King, D. R., **353.**
King, J. E., **132.**
King, K. M., **98, 270.**
King, W. V., **508.**
Kinghorn, J. M., **183.**
Kiritani, K., **208.**
Kishida, K., 153.
Kishino, K., **423.**
Kittur, S. U., **474.**
Kitzmiller, J. B., **255.**
Klingler, J., **469.**
Knipling, E. B. [*i.e.* E. F.], **235.**
Koehler, C. S., **229.**
Koshihara, T., **379.**
Kotte, W., **116.**
Koula, V., **320.**
Kovačević, Ž., **2.**
Kramer, A., **184.**
Krantz, G. W., **53.**
Krieg, A., **291, 459.**
Kriegler, P. J., **299.**
Kring, J. B., **384, 492.**
Krombein, K. V., **509.**
Kroon, A. H. J., **155.**
Krueger, H., **448.**
Krueger, H. R., **231.**
Krŭstev, V. P., **328.**
Kulkarny, H. L., **136.**
Kulzer, H., **36.**
Kuschel, G., 452.

Labeyrie, V., **194, 283, 361, 459.**
LaDue, J. P., **182.**
Lafrance, J., **130.**
Laird jr., E. F., **16.**
Laird, M., **158.**
Łąkocy, A., **327.**
Lanchester, H. P., **89, 448.**
Landi, J., **263.**
Lane, M. C., **186, 309.**
Lange, W. H., **281.**
Langenbuch, R., **202, 291.**
Langston, R. L., **384.**
Łarczenko, K., **327.**
Lassack, H., **67.**
Laudani, H., **352.**
Laughlin, R., **82, 145.**
Lavabre, E., **254.**
Lazarević, B., **4.**
Lefkovitch, L. P., **42.**
Legay, J. M., **255.**
Lehr, R., **439.**
Lekić, M., **287.**
Lemmien, W., **259.**
LeRoux, E. J., **85, 87, 130.**
Lespes, L., **295.**
Leston, D., **114.**
Leuchs, F., **202.**
Lever, R. J. A. W., **73.**
Lewis, C. T., 41.
Lhoste, J., **38.**
Lichtenstein, E. P., **426, 436.**
Lienk, S. E., **19.**
Lilly, J. H., **54.**
Lindgren, D. L., **236, 237.**
Lindquist, A. W., **508.**
Lindquist, D. A., **346.**
Linsley, E. G., **281.**
Little, F., **233.**
Lizer y Trelles, C. A., **118.**
Lloyd, C. J., **171.**
Lloyd, D. C., **188.**
Lloyd, E. P., **49.**
Lloyd, J. H., 302.
Lodos, N., **152, 364.**
Lofgren, J. A., **430.**
Lofty, J. R., **118, 169, 465.**
Lohmeyer, V. K., **242, 323.**
Long, D. B., **168, 169, 302.**
Loomis, R. S., **458.**
Loosjes, F. E., **284.**
Lotto, G. De, **299.**
Lovely, W. G., **56.**
Lubatti, O. F., **324.**
Luca, Y. de, **111.**
Luckmann, W. H., **61.**
Luginbill jr., P., **122.**
Lukefahr, M. J., **61, 62, 346.**

Lyche, H. Tambs-, **307.**
Lyngnes, R., **463.**
Lyons, L. A., **129, 315, 390, 482.**
Lyubenov, Ya., **117.**

MacCarthy, H. R., **193.**
MacCollom, G. B., **20.**
MacCreary, D., **184.**
McDermott, N., **147.**
McGarr, R. L., **437.**
MacGinnis, A. J., **482.**
McGough, J. M., **352.**
McGowan, J. C., 207.
McGregor, E. A., **121.**
McGregor, H. E., **333.**
McIntosh, A. H., **508.**
McKinlay, K. S., **43, 116, 164, 407.**
MacLagan, D. S., **20.**
McLean, D. M., **495.**
MacLellan, C. R., **11.**
McMullen, L. H., **10.**
MacPhee, A. W., **190.**
Madge, P. E., **377.**
Madsen, H. F., **222, 281, 336.**
Maheswariah, B. M., **137.**
Majumder, S. K., **472.**
Malaguti, G., **453.**
Maltais, J. B., **484.**
Manger Cats, V. de Meester-, **454, 455.**
Manickavasagar, P., **30.**
Manocha, B. D., **160.**
Maramorosch, K., **16, 17, 493.**
March, R. B., **46, 182, 228, 255, 336, 423.**
Marcovitch, S., **102.**
Markkula, M., **1, 361.**
Mars, L. Cinq-, **85.**
Marshall, J. R., **271, 380.**
Martin, D. F., **48, 49, 174, 490.**
Martin, E. L., **172,** 365.
Martin, Henri, **297.**
Martin, Hubert, **199.**
Martin, J. T., **509.**
Martinelli, E. S., **499.**
Martini, C., **400.**
Martyn, E. J., **75, 239.**
Masaki, S., **319, 363, 379, 476.**
Matsuda, R., **156.**
Matsumoto, S., **159.**
Matthysse, J. G., **354.**
Maxon, M., **46.**
Maxwell, C. W., **194.**
Maxwell Darling, R. C., **501, 502.**
May, A. W. S., **320.**
Maybee, G. E., **131, 191.**
Mead-Briggs, A. R., **82.**
Medler, J. T., **228,** 310, **347.**
Meester-Manger Cats, V. de, **454, 455.**
Mehrotra, K. N., **254.**
Melamed, V., **420.**
Melville, C., **40.**
Méneville, F. E. Guérin-, 409.
Menon, K. P. V., **36.**
Mesmer, E. T., **367.**
Metcalf, R. L., **46, 182, 228, 336, 423, 508.**
Mijin, K., **288.**
Mijušković, M., **5.**
Milaire, H., **7.**
Miles, J. R. W., **389.**
Miles, M., **305.**
Milević, K., **289.**
Millán, E., **76.**
Miller, B. S., **446.**
Miller, C. A., **331.**
Miller, L. A., **23, 266, 389.**
Milne, A., **392.**
Mirčetić, S., **5.**
Miskus, R. P., **281.**
Missonnier, J., **194.**
Mistric jr., W. J., **48.**
Miyashita, D. H., **349.**
Miyashita, K., **321.**
Mo, Tjoa Tjien, **380, 477.**
Moericke, V., **202.**
Monro, H. A. U., **132.**
Monteith, L. G., **127.**
Mookherjee, P. B., **471.**
Moore, A. D., **427.**
Moore, B. P., **357.**
Moore, L. A., **229.**
Moore, T. E., **310.**
Moreno, A. Alfaro, **77.**
Moreton, B. D., **114, 282.**
Morgan, C. V. G., **480.**
Morison, G. D., **456.**
Morofsky, W. F., **259.**
Morris, H. F., **353.**
Morris, R. F., **331.**
Morrison, F. O., **313.**
Morrison, H., **77.**
Morse, R. A., **490.**
Mount, R. H., **216.**
Moutia, L. A., **167, 421.**
Muir R. C., **249.**
Muka, A. A., **185.**
Mukerji, S., **160.**

Mulla, M. S., **309.**
Müller, H. J., **203.**
Muma, M. H., **312.**
Mune, T. L., **104.**
Murthy, D. V., **475.**
Muthu, M., **472.**
Myllymäki, S., **361.**

Naegele, J. A., **94.**
Nair, M. R. G. K., **323.**
Nakakihara, H., **441.**
Namba, R., **104.**
Narasimha Rao, D. V., **72.**
Narayanan, E. S., **12.**
Narayana Rao, M., **208.**
Nasr, S. Abul-, **27.**
Neel, W. W., **350.**
Nelson, H. D., **342.**
Nelson, W. L., **450.**
Neunzig, H. H., **220.**
Neves, O. S., **499.**
Newsom, L. D., **47, 343.**
Nicholson, A. J., **255,** 392.
Nielson, M. W., **334.**
Nijveldt, W., **455.**
Niklas, O. F., **290.**
Nirula, K. K., **36.**
Nishida, T., **446, 507.**
Nishio, Y., **275.**
Nixon, G. E. J., **110.**
Noble, L. W., **352.**
Noble, M. D., **270.**
Nolte, M. C. A., **298.**
Nour-Eldin, F., **506.**
Novák, K., **325.**
Núñez, O., **406.**

O'Brien, R. D., **96, 179.**
O'Connor, B. A., **104, 105.**
O'Dell, W. V., **425.**
Odhiambo, T. R., **502.**
Ogawa, J. M., **494.**
Ohnesorge, B., **398.**
Oka, I. N., **159.**
Okamoto, D., **379.**
Oldroyd, H., **138.**
Olsson, K., **117.**
Opyrchałowa, J., **458.**
Orillo, F. T., **106.**
Ortega, J. C., **348.**
Osman, F. H., **26.**
Ossowski, L. L. J., **70, 299.**
Ota, A., **446.**
Owens, H. B., **226.**

Painter, R. H., **123, 213, 255.**
Paliĭ, V. F., **244.**
Palmer, T. P., **255.**
Palmer-Jones, T., **373.**
Palmiter, D. H., **494.**
Paradis, R. O., **84, 85.**
Parencia jr., C. R., **51, 91, 435, 443, 445.**
Parent, B., **85, 87, 483.**
Parham, J. W., **104.**
Parisot, J., **205.**
Parker, J. R., **308.**
Parkin, E. A., **150.**
Parsons, J. L., **216.**
Passlow, T., **478.**
Patel, G. A., **472.**
Patel, R. C., **136.**
Pathak, M. D., **161.**
Patton, R. L., **508.**
Pauw, E. Bierman-, **330.**
Pearson, E. O., **501.**
Peay, W. E., **426.**
Pelekassis, C. D., **345.**
Pence, R. J., **214, 447.**
Perkins, J. F., 324.
Perron, J. P., **130.**
Perttunen, V., **207.**
Peters, D. C., **213.**
Peterson jr., G. D., **103, 116.**
Peterson, L. K., **482, 484.**
Phelps, R. J., **109.**
Philipp, W., **460.**
Phillips, G. L., **342.**
Picco, D., **403.**
Pickett, A. D., **194.**
Pingale, S. V., **161, 208, 472.**
Pitcher, R. S., **248.**
Pittman, U. J., **388.**
Plichet, F., **283.**
Pol, E. W. van der, **134.**
Polivanova, E. N., **286.**
Polivka, J. B., **231.**
Pope, R. D., **114.**
Popham, W. L., **255.**
Popov, P., **117.**
Porritt, S. W., **480.**
Portsmouth, G. B., **113.**
Posnette, A. F., **145,** 470.
Pospíšil, J., **325.**
Potter, C., **508.**
Pradhan, S., **470.**
Prasad, S. N., **473.**
Prasad, V. G., **160.**
Prebble, M. L., **265,** 485.
Pritchard, A. E., 261.

Priyavratha Rao, S. B., **72.**
Proverbs, M. D., **191.**
Pruess, K. P., **216.**
Pruthi, H. S., **162, 473.**
Pschorn-Walcher, H., **246, 469.**
Pujol, R., **406.**
Punzalan, E. C., **154.**
Pussard, R., **206, 362.**
Putman, W. L., **87.**
Puttarudriah, M., **137, 297.**
Puzzi, D., **500.**

Quednau, W., **398.**
Quintana, F. J., **116.**

Raatikainen, M., **405.**
Rabb, R. L., **54, 217, 227.**
Racoviţa, A., **80.**
Radović, M., **5.**
Rai, B. K., **470.**
Rai, L., **351.**
Rainey, R. C., **505.**
Raizenne, H., **188.**
Ramadier, P., **139.**
Ramchandra Rao, Y., **475.**
Randolph, N. M., **175.**
Rao, B. R. Subba, **12, 421.**
Rao, D., **473.**
Rao, D. V. Narasimha, **72.**
Rao, M. Narayana, **208.**
Rao, S. B. Priyavratha, **72.**
Rao, Y. Ramchandra, **475.**
Rasmussen, S., **118.**
Rau, S. Ananda, **113.**
Raw, F., **465.**
Rawlins, W. A., **96.**
Raymer, W. B., **492.**
Rayner, A. C., **12.**
Read, D. C., **22.**
Reath, N., **434.**
Reeks, W. A., **11, 126.**
Reid, R. W., **269, 333.**
Reid jr., W. J., **60, 63.**
Reiser, R., **435.**
Renk, A. V., **77.**
Reyes, G. M., **35.**
Reynolds, H. T., **95, 124, 355, 423.**
Rhode, R. H., **184.**
Richards, A. G., **255, 508.**
Richards, O. W., 173.
Richardson, B. H., **349.**
Richardson, J. K., **388.**
Richmond, C. A., **60, 449.**
Richmond, R. G., **220.**
Riehl, L. A., **95, 182.**
Rings, R. W., **76, 434.**
Riordan, D. F., **331.**
Ripper, W. E., **455.**
Risbec, J., **30.**
Risco Briceño, S. H., **500, 501.**
Risley, J. H., **126.**
Ritcher, P. O., **255.**
Rivera, C. T., **34, 106.**
Rivers, C. F., **198, 455.**
Rivnay, E., **275, 417, 419, 420.**
Roan, C. C., **351.**
Robert, P., **206.**
Roberts, D. W. A., **389.**
Roberts, J. E., **385.**
Robertson, I. A. D., **411, 504.**
Robertson, O. T., **100.**
Robertson, R. L., **58.**
Robinson, F. A., **448.**
Robinson, J., **367.**
Rodriguez, J. G., **432.**
Rodriguez, J. L., **182.**
Roeder, K. D., **255, 508.**
Roffey, J., **410.**
Roivainen, S., **240.**
Ross, A. F., **495.**
Ross, E. S., **36.**
Ross, H. H., **264, 310.**
Rothenbuhler, W. C., **255.**
Roudier, A., **366.**
Roussel, J. S., **343, 344, 346.**
Rout, G. D., **186.**
Rozeboom, L. E., **255.**
Rubtsov, I. A., 83.
Ruckes jr., H., **234.**
Rudinsky, J. A., **125, 489.**
Rupp, H., **467.**
Rusk, H. W., **56, 234.**
Russell, L. M., **136.**

Sabrosky, C. W., **136.**
Sanford, K. H., **190.**
Sans, W. W., **389.**
Sardar Singh, **162.**
Sasa, M., **379.**
Sasaki, C., 208.
Sastrosadarpo, S., **318.**
Saunders, G. W., **32.**
Saunders, J. P., **448.**
Savary, A., **77.**
Savzdarg, É. É., **69.**
Sawaf, S. K. El-, **24.**
Scales, A. L., **449.**

Schaefers, G. A., **441.**
Schaerffenberg, B., **279.**
Schedl, K. E., **457.**
Scheepers, C. C., **301, 410.**
Scheiding, U., **292.**
Schmitz, G., **45, 151.**
Schmutterer, H., **248, 462.**
Schneider, F., **238.**
Schrader, G., 330.
Schreier, O., **199.**
Schremmer, F., **200.**
Schuch, K., **202.**
Schvester, D., **39, 394, 395.**
Schwerdtfeger, F., **460.**
Schwitulla, H., **2.**
Scott, E. I. C., **150.**
Scott, L. B., **59.**
Scriven, G. T., **186.**
Scudder, G. G. E., **114.**
Sekhar, P. S., **383.**
Selhime, A. G., **233.**
Selivanova, S. N., 80.
Semel, M., **181, 231.**
Sengupta, G. C., **163, 186, 345.**
Sepasgosarian, H., **291.**
Shands, W. A., **50.**
Shapovalov, A. A., **69.**
Sharangapani, M. V., **161.**
Shaw, M. W., **307.**
Shea, W. D., **354.**
Sheets, L. W., **221.**
Sheffield, F. M. L., **497.**
Shenefelt, R. D., **486.**
Shepard, H. H., **508.**
Shepherd, R. J., **18.**
Sherman, M., **214.**
Shigai, H., **379.**
Shimazaki, T., **159.**
Shirck, F. H., **430.**
Sial, N. M., **37.**
Silva, D. M. de, **497.**
Silva, P., **317.**
Silveira Guido, A., **406.**
Silver, G. T., **332, 391.**
Silvestri, F., 409.
Simmonds, F. J., **134, 135, 196, 416.**
Simmonds, H. W., **105.**
Simone, M., **281.**
Simons, J. N., **15, 493.**
Simpson, G. W., **50.**
Singh, Asket, **363.**
Singh, Sardar, **162.**
Sivik, F. P., **225.**
Skaife, S. H., 416, **503.**
Skerrett, E. J., **509.**
Slow, J. M. (Mrs. J. M. Wells), **166.**
Slykhuis, J. T., **388, 492.**
Smalley, E. B., **18.**
Smallman, B. N., 64, **254.**
Smirnoff, W. A., **232, 296.**
Smit, B., **407.**
Smit, C. J. B., **502.**
Smith, C. C., **126.**
Smith, E. H., **51, 180, 181.**
Smith, F. F., **57, 232, 439.**
Smith, H. S., 392.
Smith, J. M., **393.**
Smith, K. M., **198, 255, 455.**
Smith, L. C., **242.**
Smith, O. F., **226.**
Smith, O. J., **86.**
Smith, R. F., **255.**
Smith, R. H., **215.**
Smith, W. A., **32.**
Smith, W. E., **126, 488.**
Smith jr., W. T., **432.**
Smithers, C. N., **250, 368.**
Snapp, O. I., **343.**
Snetsinger, R., **47, 177.**
Snyder, T. E., **198.**
Soliman, A. A., **25.**
Solomon, M. E., **172.**
Somsen, H. W., **122.**
Southgate, B. J., **114,** 304, **415,** 416.
Spencer, H., **233.**
Speyer, W., **78.**
Srivastava, A. S., **163.**
Srivastava, P. D., **101.**
Stafford, E. M., **46, 182.**
Stanton, W. R., 152.
Staples, R., **179.**
Starks, K. J., **55.**
Stauffer, J. F., **311, 458.**
Steiner, L. F., **90, 349, 350.**
Steinhaus, E. A., 158, **217, 255, 386.**
Stenseth, C., **37.**
Stephens, J. M., **317.**
Stephens, S. G., **337.**
Stephenson, J. W., **169.**
Stern, V. M., **124.**
Stevenson, H. A., **271, 380.**
Stevenson, W. A., **221.**
Stewart, D., **89.**
Stojanović, D., **287.**
Stombler, V., **345.**
Stone, M. W., **178.**
Stover, L. H., **494.**
Strickland, A. H., **463.**
Strogaya, G. M., **8.**
Strokov, V. V., **243.**

Strong, R. G., **96.**
Struble, F. B., **18.**
Struble, G. R., **384.**
Stuckenberg, B. R., **250.**
Sturgess, O. W., **258.**
Subba Rao, B. R., **12, 421.**
Subrahmanyan, V., **208.**
Sullivan, C. R., **485.**
Sullivan, W. N., **235.**
Summers, F. M., **281.**
Sun (Yun-pei), **99, 217.**
Sundby, R., **243.**
Swaine, G., **39.**
Swaminathan, M., **208.**
Swank, G. R., **353.**
Swenson, K. G., **173.**
Swirski, E., **274.**
Sylvester, E. S., **52, 155.**
Synave, H., **36.**
Szumkowsky, W., **453.**

Tachikawa, T., **404.**
Tadić, M., **288, 397.**
Takahashi, S., 208.
Takeshita, R. M., **18.**
Tamashiro, M., **214.**
Tambs-Lyche, H., **307.**
Tamura, I., **423.**
Tanada, Y., **173.**
Tanasijević, N., **3.**
Tapley, R. G., **366.**
Targe, A., **283.**
Taschenberg, E. F., **337.**
Tashiro, H., **230.**
Taylor, C. E., **147, 307.**
Taylor, D. J., **211, 254.**
Taylor, E. A., **57, 232.**
Taylor, L. R., **144, 148.**
Telford, H. S., **450.**
Templado, J., **294.**
Tenhet, J. N., **225.**
Teotia, T. P. S., **161.**
Thalenhorst, W., **195, 398, 460.**
Thomas, I., **156.**
Thompson, W. R., 392, 393.
Thomson, M. G., **387.**
Thresh, J. M., **212.**
Thung, T. H., 477.
Thurston, R., **55.**
Tinnilä, A., **1, 405.**
Tjoa Tjien Mo, **380, 477.**
Todd, D. H., **372.**
Tolhurst, J. A. H., **113.**
Tomašević, B., **287.**
Tombes, A. S., **99.**
Tomisawa, J., **475.**
Tomlinson jr., W. E., **103.**
Toms, A. M., **368.**
Townes, H., **404.**
Trelles, C. A. Lizer y, **118.**
Tripp, H. A., **188.**
Tunnock, A., **173.**
Tunstall, J. P., **165.**
Turner jr., E. C., **441.**
Turner, N., **508.**
Turney, H. A., **312.**

Uhmann, E., **477.**
Ushatinskaya, R. S., **9.**
Usinger, R. L., **156.**
Usman, S., **474.**
Utida, S., 213.
Uvarov, B. P., **370.**

Valcarce, A. C., **174.**
Valdés, E., **406.**
Valdez, R. B., **106.**
van den Bosch, R., **230, 437.**
Vanderplank, F. L., **413.**
van der Pol, E. W., **134.**
Vanderzant, E. S., **186, 435.**
van de Vrie, M., **463.**
van Dinther, J. B. M., **318, 406.**
van Eyndhoven, G. L., **318.**
van Genderen, H., **329.**
Vappula, N. A., **280.**
Varley, E. R., **150.**
Varma, P. M., **275.**
Vasseur, R., **394, 395.**
Veber, J., **289.**
Velasco H., R., **451.**
Venugopal, S., **137.**
Verdier, M., **83.**
Vereshchagin, B. V., **245.**
Vereshchagina, V. V., **245.**
Viado, G. B., **106, 154.**
Viel, G., **38, 138.**
Vincent, L. E., **236.**
Visser, T., **113.**
Vité, J. P., **66, 125, 489.**
Vogel, W., **469.**
Vrie, M. van de, **463.**

Wadhi, S. R., **471.**
Waede, M., **78.**
Wagenknecht, A. C., **51.**

Waggoner, P. E., **492.**
Wakeland, C., **308.**
Walcher, H. Pschorn-, **246, 469.**
Walker, A. J. K., **31.**
Walker jr., J. K., **335.**
Walker, R. L., **450.**
Wallace, C. R., **119.**
Wallace, M. M. H., **75, 277.**
Wallenberg, E., **362.**
Wallis, R. C., **431.**
Wallis, R. L., **232, 340.**
Walstrom, R. J., **430.**
Walter, E. V., **101.**
Walter, T. E., **113.**
Walters, J., **10.**
Walton, R. R., **219.**
Walz, A. J., **382.**
Wannamaker, W. K., **338.**
Ward, J., **300.**
Warner, R. E., **357.**
Watanabe, C., **404.**
Waters, W. E., **488.**
Watters, F. L., **392.**
Watts, J. G., **177.**
Way, M. J., **508.**
Weaver, C. R., **216.**
Webb, F. E., **331.**
Webb, R. E., **19.**
Weber, G., **400.**
Weber, P., **238.**
Webster, B. N., **113.**
Wedding, R. T., **95, 182.**
Węgorek, W., **326, 327.**
Weiant, E. A., **508.**
Weidhaas, D. E., **339.**
Weiser, J., **289, 398.**
Wells, Mrs. J. M. (see Slow, J. M.).
Wene, G. P., **92, 430.**
Wessela, C. P., **488.**
West, A. S., **133.**
Wetherly, A. H., **479.**
Whalley, P. E. S., **367, 409.**
Wheeler, H. G., **232.**
Whellan, J. A., **364.**
White, G. D., **333.**
White, R. T., **338.**
Whiteside, J. M., **488.**
Wilcox, J., **50, 176,** 451.
Wildbolz, T., **469.**
Wilkinson, A. T. S., **480.**
Wille, H., **468.**
Wille, J. E., **454.**
Williams, G. C., **149.**
Williams, J. R., **371.**
Williams, W. L., **495.**
Willison, R. S., **22.**
Wilson, G., **375.**
Wilson, M. C., **350.**
Winks, W. R., **478.**
Wise, K. A. J., **373.**
Wishart, G., **191, 192.**
Wit, S. L., **329.**
Wolf III, J. P., **336.**
Wolfenbarger, D. O., **385, 448.**
Wood, G. W., **193.**
Woodville, H. C., **464.**
Woodworth, C. E., **186.**
Wyatt, I. J., **153, 276.**
Wyniger, R., **294.**

Yadao, A. I., **107.**
Yamanaka, H., **476.**
Yasue, Y., 208.
Yathom, S., **419.**
Yeo, D., **415.**
Yokoyama, K., 153.
Yule, W. N., 302.
Yushima, T., **340, 475.**
Yust, H. R., **98.**

Zaher, M. A., **26.**
Zahradník, J., **14.**
Ziady, S. El-, **306.**
Zimmack, H. L., **439.**
Zimmerman, E. C., **360,** 509.
Zimmermann, B., **461.**
Živojinović, S., **329.**
Zuk, P., **270.**
Zwölfer, H., **246, 466.**

GENERAL INDEX

In the case of scientific names of arthropods, the page references are cited only under the generic headings. Chemical compounds having numerical prefixes (bis-, di-, etc.) are indexed under these prefixes, but the prefixes o-, m- and p- (ortho, meta and para), O-, N- and S- to indicate position of radicals, and normal, secondary and tertiary are ignored for alphabetisation. Insecticides for which accepted common names have been recorded and defined (*R.A.E.*, A **41** 2–3, 268 (note)) are indexed under these names only.

A.

abbotii, Neodiprion.
abbreviata, Aphis.
abdominalis, Macrocentrus; Olla; Philopsyche (see *Charitopimpla sericata*).
aberrans, Pyrilla; Typhlodromus.
Abies, Lepidoptera on, in U.S.A., **385, 488.**
Abies alba, Chermes spp. on, in Europe, **200, 246, 470;** *Choristoneura murinana* on, in Germany, Czechoslovakia and France, **140, 398, 466.**
Abies amabilis, Coleoptera infesting, in British Columbia, **10, 265, 266.**
Abies balsamea, pests of, in Canada, **12, 128, 200, 246, 266, 267, 314, 332, 347, 466;** *Choristoneura fumiferana* on, in U.S.A., **347.**
Abies concolor, Hemerocampa pseudotsugata on, in California, **384.**
Abies grandis, Pseudohylesinus nebulosus on, in British Columbia, **10.**
abietella, Dioryctria.
abieticola, Gilpinia.
abietina, Pristiphora.
abietis, Hylobius.
abjectella, Drosica.
abutilonea, Trialeurodes.
AC-528 (see 2, 3-p-Dioxandithiol S, S-Bis (O, O-diethyl phosphorodithioate).
Acacia, Kotochalia junodi on, in South Africa, **70, 198, 299;** termites associated with, in Western Australia, **358;** *Caryedon gonagra* breeding in, **114.**
Acacia koa, Cryptophlebia illepida on, in Hawaii, **104.**
Acacia mollissima, Kotochalia junodi on, in South Africa, **250.**
acaciae, Caryedon (*Pachymerus*).
Acalymma trivittata, experiments with virus diseases of squash and, in California, **16.**
Acalymma vittata, dusts controlling, on squash in Ontario, **23;** toxicity of paraoxon to, **231.**
Acantholyda pinivora (*nemoralis*), Trichogrammatid parasitising, in central Europe, **399.**
Acanthopsyche junodi (see *Kotochalia*).
Acanthoscelides obtectus (*obsoletus*, auct.), on field beans in France, **194, 361;** effect of temperature on spread of, **361;** parasites of, **284, 399;** weight losses caused by, in stored pulses, **334, 335;** method for detecting infestation of stored beans by, **39;** tests of insecticides against, **141, 171.**
Acanthospermum hispidum, insects associated with, in South America, **189;** doubtful possibility of biological control of, in Nigeria, **188, 189.**
Acarus siro, auct. (see *Tyroglyphus farinae*).
Acentrocneme hesperiaris (see *Aegiale*).
Acer spp., experiments with *Lambdina fiscellaria* and, **128.**
Aceratagallia sanguinolenta, bionomics of, on forage crops in Rhode Island, **220.**
Aceria mangiferae, on mango in Egypt, **28.**
Aceria phloeocoptes, bionomics of, on plum in Germany, **460.**
Aceria sheldoni (on *Citrus*), sprays against, in California, **225;** in Egypt, **28.**
Aceria tulipae, in Alberta, **388, 492;** in U.S.A., **18, 179, 312;** on field and stored garlic, **18;** on wheat and sorghum, **312;** transmitting wheat viruses, **179, 388, 492.**
aceriana, Gypsonoma (*Epinotia*).
Acetylcholine, synthesis of, in normal and parathion-treated insect eggs, **254, 255, 340.** (See also Cholinesterases.)
Achaea catocaloides, on cacao in French Cameroons, **254.**

Achatina fulica, introduced natural enemies and attempted biological control of, in Guam, **103.**
Acheta domesticus, experiments with Thiodan against, **141.**
Achrysocharella ruforum, parasite of *Diprion pini* in Czechoslovakia, **325.**
Achrysocharis formosa, parasite of *Pseudonapomyza dianthicola*, in France, **283.**
acinaciformis, Coptotermes.
Acleris comariana, bionomics and control of, on strawberry in Germany, **195;** parasites of, **195.**
Acontia dacia, on cotton in Texas, **49;** *Collops* spp. experimentally feeding on, **335;** insecticides against, **49.**
acraea, Estigmene.
Acrocercops conflua, on castor in Egypt, **24.**
Acrocercops cramerella, sprays against, on cacao in Philippines, **107, 354.**
Acrodel, **73.**
Acrosternum hilare, causing cat-facing of peaches in Ohio, **434.**
actuosus, Schedorhinotermes (*Rhinotermes*).
aculeatus, Macromischoides.
acuminata, Aelia.
acupunctatus, Scyphophorus (see *S. interstitialis*).
acuta, Leptocorisa.
acutangularis, Blepharomastix.
acutus, Scaphytopius.
Acyrthosiphon (see *Macrosiphum*).
Adalia bipunctata, predacious on Aphids in Britain, **306;** feeding on eggs of own species, **306;** ant attacking, **306.**
Adansonia digitata, Planococcus citri transmitting cacao virus from, in Ghana, **210.**
Adelges (see *Chermes*).
Adelpherupa, parasites of, on rice in French Cameroons, **30, 365.**
Adelphocoris lineolatus, insecticides against, on lucerne in Wisconsin, **228.**
Adelphocoris rapidus, on cotton and lucerne in U.S.A., **121, 228;** influence of irrigation and fertiliser on populations of, **121;** insecticides against, **228.**
Aden Protectorate, *Schistocerca gregaria* in, **504, 505.**
Adhesives, uses of, for catching Aphids, **16, 51, 336;** trap treated with, for collecting Cicadellids, **494.**
Adisura atkinsoni, isolation and use of bacillus infecting, on *Dolichos lablab* in India, **472.**
adonidum, Pseudococcus.
Adoxophyes orana, on fruit trees in Switzerland, **205.**
adusta, Leschenaultia (*Rileymyia*).
advena, Ahasverus.
Aëdes aegypti, mortality of, at low temperatures, **235;** use of larvae of, in tests of phosphorus insecticides, **231.**
Aegeria apiformis (see *Trochilium*).
Aegeria exitiosa, parathion inhibiting cholinesterase in eggs of, **51.**
Aegiale hesperiaris, bionomics and control of, on *Agave tequilana* in Mexico, **278.**
aegypti, Aëdes.
Aelia spp., factors affecting abundance of, on wheat in Russia, **286.**
Aeneolamia, of Venezuela, **452, 453.**
Aeneolamia flavilatera, in British Guiana, **453;** in Venezuela, **452, 453;** on sugar-cane, **452, 453;** subspecies of, **453.**
Aeneolamia lepidior, on sugar-cane in Venezuela, **452, 453.**
Aeneolamia reducta, on sugar-cane in Venezuela, **452.**
Aeneolamia reducta montana, on sugar-cane in Venezuela, **453.**
Aeneolamia varia, subspecies of, on sugar-cane and cereals in Venezuela, **452.**
aeneoviridis, Catolaccus.
aenescens, Naranga.
aereus, Monodontomerus.
Aerosols, insecticides applied as, **226, 227, 274, 289, 320;** application of, from aircraft, **289, 320.** (See Fog Generators.)
aethiopicus, Apanteles.
affine, Mezium.
affinis, Dasyneura.
afrasiaticus, Oligonychus.
Africa, international convention for control of *Locusta migratoria migratorioides* in, **71;** book on cotton pests of, **501, 502;** (East), book on Aphids of, **213;** list of forest insects of, **240.**
Africa, French Equatorial, weevils on coffee and *Hibiscus cannabinus* in, **366, 408;** parasite of coffee weevil in, **366.**
Africa, French West, pests of *Cola* and cacao in, **406, 407;** *Maliarpha separatella* on rice in, **172;** Coleoptera in forests in, **274;** termites in, **459, 503.**
Africa, South, *Kotochalia junodi* on *Acacia* in, **70, 198, 250, 299;** Coccids on *Citrus*, pineapple and vines in, **149, 298, 299;** Coleoptera on cowpeas in, **109, 416;** *Merodon* spp. on bulbs and *Gladiolus* corms in, **250;** insects in stored grain in, **407;** *Hylotrupes bajulus* in, **251;** *Locustana pardalina* in, **502;** *Loxostege frustalis* in, **110, 251;** termites

in, **199, 503**; beneficial insects and biological control in, **110, 250, 251, 298**; diseases of insects in, **198, 250.**
African Migratory Locust (see *Locusta migratoria migratorioides*).
African Snail, Giant (see *Achatina fulica*).
africana, Parerupa (*Diatraea, Proceras*).
africanus, Lymaenon (*Gonatocerus*).
Agallia, on *Acanthospermum hispidum* in South America, **189.**
Agallia constricta, bionomics of, on forage crops in Rhode Island, **220.**
Agar, use of, in technique for introducing eggs of *Dacus tryoni* into fruits, **374**; in medium for rearing *Drosophila*, **132**; sawdust fixed with, for feeding *Kalotermes durbanensis*, **503.**
Agathis festiva, toxicity of spray deposits to, parasitising *Cydia molesta* in New Jersey, **93, 94.**
Agathis stigmatera, parasite of sugar-cane moth borers, in British Guiana, **356**; in West Indies, **134, 135.**
Agave, pests of, in Mexico, **278, 279.**
Agave decipiens, effect of, as food-plant, on *Aonidiella aurantii* and its parasites, **393.**
Agave fourcroides, **279.**
Agave sisalana, **279.**
Agave tequilana, **278.**
Ageniaspis purillae, parasite of *Pyrilla perpusilla* in India, **422.**
aggressiva, Chermes piceae.
Aglais urticae, teneral stage in, **145.**
Agonia fuscipes, bionomics of, on *Pandanus* in India, **323.**
Agonum, feeding on wireworms in Nova Scotia, **11.**
agonus, Limonius.
Agrilus anxius, bionomics and control of, on birch in New Brunswick, **269, 270**; natural enemies of, **270.**
Agrilus macroderus, bionomics of, in fruit-tree nurseries in Yugoslavia, **287, 288.**
Agrilus viridis ab. *fagi*, bionomics and parasite of, on *Fagus sylvatica* in Germany, **247**; insecticides against, **247.**
Agriotes, soil treatments against, injuring potato in France, **38.**
Agriotes mancus, soil preference of, in U.S.A., **384.**
Agriotes obscurus, insecticides against, injuring cereals in British Columbia, **480.**
Agriotes sputator, in Nova Scotia, **11, 483**; favouring invasion of grass sod by *Hieracium*, **483**; use of, in precipitin-test studies of wireworm predators, **11.**
Agromyza, on rice in French Cameroons, **365.**
Agromyza phaseoli (see *Melanagromyza*).
Agropyrum spp., relation of forms of *Oscinella frit* to, in U.S.S.R., **80, 81.**
Agrostis tenuis, Endria inimica on, in Rhode Island, **236.**
Agrotis orthogonia, sprays against, on wheat in Kansas, **440**; method of rearing, **316.**
Agrotis segetum, on beet in Rumania, **80.**
Agrotis spinifera, in Egypt, **29.**
Agrotis ypsilon, bionomics of, in Egypt, **29**; systemic insecticides against, on cotton in U.S.A., **424.**
Agrypnus fuscipes (see *Lanelater*).
Agrypon varitarsum, parasite of *Choristoneura murinana* in France, **466.**
aguti, Praon.
Ahasverus advena, in stored cereals in Oregon, **173.**
Aholcus (see *Telenomus*).
Aircraft, used for applying insecticides, **71, 95, 187, 221, 244, 277, 289, 299, 300, 320, 374, 411, 412, 418, 425, 426, 429, 448, 486, 488, 505, 506**; methods of spraying from, for locust control, **411, 412, 505, 506**; factors affecting deposition of granules from, in hilly terrain, **221**; carriage of noxious insects in, **158, 507**; effects of high-altitude cold on insects in, **235**; transport of beneficial Lampyrid by, **103.** (See Helicopter.)
ais, Ectemnius texanus.
Aktiv-Gesarol, **462.**
Alabama, cotton pests in, **58, 216**; *Heliothis zea* on maize in, **55**; predacious thrips in, **58.**
Alabama argillacea, insecticides against, on cotton in Texas, **48.**
Alaus speciosus, introduced into Western Samoa against *Oryctes rhinoceros*, **158.**
Alberta, *Bruchophagus caraganae* in seeds of *Caragana* in, **189, 190**; pests and diseases of wheat in, **21, 388, 482, 484, 492**; natural enemies of *Ips* spp. in pine slash in, **269, 333**; Megachilid pollinating lucerne in, **190.**
albicosta, Loxagrotis.
albida, Tettigoniella (see *Tettigella spectra*).
albipalpus, Hemiteles.
albisquama, Brachymeria.
albizonalis, Noorda.
albohirtum, Dermolepida.
Alcidodes bruniqueli, sp. n., bionomics of, on coffee in Ubangi, **366**; parasite of, **366.**

Aldrin, against ants, **32, 33;** against *Cotinis nitida*, **55, 60, 99;** against Curculionids, **48, 50, 84, 185, 341, 343, 438, 441;** against Elaterids, **38, 63, 178, 187, 282, 451, 480;** development of resistance to, in *Conoderus falli*, **63;** against other Coleoptera, **7, 8, 23, 49, 91, 178, 204, 216, 223, 349;** against *Hylemyia* spp., **98, 178, 271, 389, 430, 431;** against other Diptera, **90, 123, 204, 217, 423, 464, 483;** against Mirids, **30, 211, 228, 254;** against other Hemiptera, **73, 228, 486, 499, 500;** against Noctuids, **49, 137, 388, 440, 449;** against other Lepidoptera, **15, 23, 56, 75, 131, 351;** against Orthoptera, **162, 228;** against termites, **151, 164, 226;** effects of, on Tetranychids, **432, 433, 507;** against *Vasates lycopersici*, **50;** laboratory tests of toxicity of, to insects, **8, 55, 101, 162, 217, 237, 470, 486;** climatic factors affecting toxicity of, **48;** effects of, on plants, **15, 20, 21, 123, 124, 271, 389, 431, 432, 433, 471;** in baits, **388;** in dusts, **7, 8, 15, 23, 30, 38, 50, 60, 99, 162, 271, 343, 388, 438, 480, 499;** in granules, **49, 56, 91, 99, 124, 185, 343, 351, 441;** in sprays, **32, 33, 48, 49, 50, 56, 73, 75, 84, 90, 91, 98, 123, 131, 137, 178, 211, 217, 228, 254, 271, 349, 431, 440, 449, 470, 480, 483, 486, 499, 507;** soil treatment with, **7, 8, 38, 49, 63, 91, 98, 124, 164, 187, 204, 205, 216, 223, 226, 282, 343, 388, 430, 431, 480, 499, 500;** applied in fertilisers, **49, 50, 91, 123;** persistence of, in soil, **187, 216, 226, 343, 388, 436, 437, 441;** effect of, on soil micro-organisms, **156;** seed treatments with, **20, 21, 93, 216, 341, 389, 431, 451;** treatment of planting material with, **271, 431, 464, 465;** and DDT, **228;** and demeton, **507;** and sulphur, **438;** and organic fungicides, **93;** bioassay of, **99, 436;** colorimetric determination of, **99;** oxidation of, to dieldrin in animals, animal products and soil, **99, 437.**

Aleochara bilineata, parasite of *Hylemyia brassicae* in Czechoslovakia, **326.**

Aleurocanthus woglumi, map of distribution of, **509;** in Haiti, **509;** not occurring in Hawaii, **509;** on fruit trees in Pakistan, **72, 73;** natural enemies of, **73, 509;** sprays against, **73.**

Aleurodes (see *Aleyrodes*).

Aleurothrixus floccosus, sprays against, on *Citrus* in Peru, **454.**

Aleyrodes proletella (*brassicae*), avoidance of white surfaces by, **203.**

Alfalfa (see Lucerne).

Alfalfa Aphis, Spotted (see *Myzocallis maculata*).

Alfalfa Weevil (see *Hypera variabilis*).

alfierii, Bruchidius (see *B. trifolii*).

Algeria, *Aphis gossypii* and tristeza disease of *Citrus* in, **206;** *Bruchus lentis* on lentils in, **111;** natural enemies of *Parlatoria blanchardii* in, and their introduction into Morocco, **296, 297.**

Allethrin, laboratory tests of toxicity of, to insects, **38, 237;** ethyl p-chlorophenoxycyclopropane carboxylate compared with, **38.**

Allotruxalis strigata, in grazing lands in Uruguay, **406.**

Almond, mites on, in U.S.A., **281.**

Almond Moth (see *Ephestia cautella*).

aloeus, Strategus.

Alopecurus pratensis, Chirothrips manicatus on, in New Zealand, **257.**

Alphitobius laevigatus, tests of pyrethrins against, **171.**

Alsike Clover (see *Trifolium hybridum*).

Alsophila pometaria, sampling of populations of, on oak in Nova Scotia, **11.**

Althaea, Earias insulana on, in Israel, **419.**

Alumina, dust of, against *Trogoderma granarium*, **150.**

Aluminium Foil, adhesive bands applied on, **336.**

Aluminium Phosphide, fumigation of stored maize with, against insects, **298.**

amanii, Coptotermes.

Amara, feeding on wireworms in Nova Scotia, **11;** destroying egg pods of grasshoppers in U.S.A., **308.**

Amara obesa, **308.**

Amara hesperia, **308.**

Amatissa consorta, on tea in India, **114.**

Amblymerus bruchophagi, parasite of *Bruchophagus caraganae* in Canada, **189.**

Amblypelta, revision of, **412;** lists of food-plants of species and subspecies of, **413.**

Amblypelta cocophaga, on coconut, etc., in Solomon Is., **412, 413;** experimentally attacking cacao, **413.**

Amblypelta cocophaga malaitensis, subsp. n., on cacao, etc., in Malaita, **412, 413.**

Amblypelta costalis, on cassava and papaya in Bellona, **412.**

Amblypelta costalis rennellensis, subsp. n., on cassava, papaya, etc., in Rennell, **413.**

Amblypelta costalis szentivanyi, subsp. n., food-plants of, in New Guinea Territory, **412, 413.**

Amblypelta cristobalensis, sp. n., on cassava, etc., in San Cristobal, **412.**

Amblypelta gallegonis, on cassava in Ysabel, **413.**
Amblypelta gallegonis bougainvillensis, subsp. n., on cassava, etc., in Solomon Islands, **413.**
Amblypelta lutescens, in Australia and islands to north, **412;** food-plants of, **412, 413.**
Amblypelta lutescens papuensis, subsp. n., food-plants of, in New Guinea, **412.**
Amblypelta nitida, in Australia, **412;** on peach, **412.**
Amblypelta theobromae, sp. n., on cacao, etc., in New Guinea, **412, 413.**
America, North, supplement to Catalogue of Hymenoptera of, **509.**
American Cockroach (see *Periplaneta americana*).
Am. Cyanamid 3911 (see Thimet).
Am. Cyanamid 4124 (see O, O-Dimethyl O-2-Chloro-4-nitrophenyl Phosphorothioate).
Am. Cyanamid 12008 (see O, O-Diethyl S-Isopropylthiomethyl Phosphorodithioate).
Am. Cyanamid 12009 (see O, O-Diethyl S-n-Propylthiomethyl Phosphorodithioate).
Am. Cyanamid 12013 (see O, O-Diisopropyl S-Isopropylthiomethyl Phosphorodithioate).
American Holly (see *Ilex opaca*).
americana, *Leucopis* (*Leucopina*); *Periplaneta.*
americanus, *Neodiprion.*
Amino Acids, in medium for rearing *Platyedra gossypiella*, **186.**
Amitus, parasite of *Aleurocanthus woglumi* in Pakistan, **73.**
Ammonium Chloride, in baits for *Ceratitis capitata*, **349.**
Ammonium Sulphate, effect of manuring with, on *Atherigona indica* and sorghum, **72.**
ampelophaga, *Theresimima.*
Amphimallon majalis, parasite of, in France, **279;** in New York, **220, 230;** susceptibility of, to strains of milky-disease organisms, **230;** aeroplane treatment of grassland with dieldrin against, **220.**
Amphimallon solstitiale, parasites of, in Hungary, **68;** on beet in U.S.S.R., **80.**
amplicollis, *Conoderus.*
Ampycodes (see *Maliarpha*).
Ampycodes pallidicosta (see *Maliarpha separatella*).
Amsacta moorei, Mermithid parasite of, on cereals and pulses in India, **474.**
Amsacta moorei f. *sara*, **474.**
amydraula, *Batrachedra.*
Anagasta kühniella, in flour mill in Britain, **243;** in stored cereals in Oregon, **173;** amount of food required by, **173;** tests of sulphuryl fluoride and pyrethrins against, **88, 171;** used for rearing parasites, **251, 399.**
Anagrus flaveolus, parasite of Delphacids in Mauritius, **371.**
Anagyrus aurantifrons, parasite of *Pseudococcus njalensis* in Ghana, **164.**
Anagyrus pullus, parasite of *Pseudococcus njalensis* in Ghana, **164.**
Anaphe venata, on *Cola* in West Africa, **407, 506;** bionomics and control of, **506.**
Anaphothrips obscurus, on *Dactylis glomerata* in New Zealand, **257.**
Anasa tristis (in U.S.A.), not transmitting squash mosaic, **15;** parasite and biological control of, **437;** technique of rearing, **437.**
Anastatus disparis, egg parasite of *Lymantria dispar* in Spain, **295;** *Ooencyrtus kuvanae* not affecting development of, **295.**
Anastrepha fraterculus, map of distribution of, **240.**
Anastrepha ludens, diet stimulating egg production by, **184;** map of distribution of, **240.**
Anastrepha mombinpraeoptans, map of distribution of, **240.**
Ancistrotermes, insecticides protecting cotton from, in Belgian Congo, **151.**
Ancylis comptana (*fragariae*), insecticides against, on strawberry in Ontario, **131.**
ancylivorus, *Macrocentrus.*
Andropogon virginicus, effect of chlordane on, **231.**
angaleti, *Apanteles.*
Angelica Oils, uses and effectiveness of, as attractants for *Ceratitis capitata*, **349, 350.**
Angitia, bionomics of, parasitising *Gnorimoschema operculella* in India, **474, 475.**
Angitia armillata, parasite of *Plutella maculipennis* in Bulgaria, **329.**
Angitia cerophaga, parasite of *Plutella maculipennis* in New Zealand, **373.**
Angitia chilonis, parasite of *Cryptophlebia illepida* in Hawaii, **104.**
Angitia molestae, parasite of *Cydia molesta* in New Jersey, **93;** toxicity of insecticides to, **93, 94.**
angulatus, *Blepharidopterus.*
angusticeps, *Thrips.*
angustipennis, *Nemorilla.*
angustus, *Cynaeus.*

Anisopteromalus camerunus, sp. n., parasite of *Pachydiplosis oryzae* in French Cameroons, **30, 111.**
annuae, Rhopalosiphum.
annulatum, Eiphosoma.
annulicornis, Bracon; *Opius.*
Anobium punctatum, parasites of, in timber in Norway, **463.**
Anolis spp., destroying natural enemies of Coccids in Bermuda, **416**; suggested introduction of birds against, **416.**
Anomala exitialis, on tobacco in S. Rhodesia, **408**; adult habits of, **408**; tests of insecticides against, **408.**
Anomala horticola, in England, **82**; storage and utilisation of food reserves by, **82**; absorption of water by egg of, **145.**
Anomala opacicollis, on tobacco in S. Rhodesia, **408**; adult habits of, **408.**
Anomala orientalis, susceptibility of, to milky diseases of Australian Lamellicorns, **191.**
Anomala pinguis, on tobacco in S. Rhodesia, **408**; adult habits of, **408.**
Anomis flava (see *Cosmophila*).
Anoplocnemis phasiana, bionomics and control of, in India, **137.**
antennatus, Bracon.
Antestiopsis lineaticollis, tests of insecticides against, on coffee in Belgian Congo, **151, 152.**
Anthemis cotula, Cicadellid transmitting virus from *Plantago* to, in Britain, **146.**
Anthocoris nemorum, bionomics of, in Britain, **405.**
Anthonomus grandis (on cotton in U.S.A.), extension and distribution of, **100**; question of resistance of strains of cotton to, **337, 338**; on *Thespesia populnea*, **62**; dusts or sprays against, **48, 51, 52, 61, 92, 436, 438, 439, 443, 444, 446, 450**; seed treatments with systemic insecticides against, **91, 92, 436, 449**; susceptibility or resistance to insecticides in strains of, **343, 344, 346, 450**; effect of food on fat accumulation in strains of, **343.**
Anthores leuconotus, persistence of DDT spray deposits against, on coffee in Tanganyika, **367.**
anthracina, Hylemyia (*Pegohylemyia*).
Anthribus nebulosus, bionomics of, predacious on *Eulecanium corni* in France, **284.**
antica, Draeculacephala.
antiqua, Hylemyia (*Delia*).
Antonina graminis (Rhodes Grass Scale), new parasite of, in India, **136.**
antrami, Clania.
Ants, associated with Aphids, **306, 307**; associated with Coccids, **112, 163, 211, 254, 417, 498, 499**; destroying other insects, **165, 409, 449**; lizards feeding on, **416**; measures against, **32, 33, 211, 318, 350, 454**; reducing persistence of radioactive cobalt in test areas, **486.**
Ants, Argentine (see *Iridomyrmex humilis*).
Ants, Leaf-cutting (see *Atta*).
Anuraphis padi, not transmitting mild mosaic of chrysanthemum in Britain, **147.**
Anuraphis pyri, sprays against, on pear in France, **139.**
Anuraphis roseus, sprays against, on apple in France, **139.**
anxius, Agrilus.
Anystis vitis, attacking wheat gall-midges in Germany, **79.**
Aonidiella aurantii, on *Citrus* in California, **263, 393, 433**; effect of climate and food-plants on parasites of, **263, 393**; sprays controlling, **433.**
aonidum, auct., *Chrysomphalus* (see *C. ficus*).
Aoplus velox, parasite of *Lambdina fiscellaria* in Newfoundland, **128.**
Apanteles, parasite of *Laelia fracta* in French Cameroons, **365**; parasite of *Choristoneura murinana* in France, **466**; parasite of *Lambdina fiscellaria* in Newfoundland, **128**; parasite of *Eucosma monitorana* in Ontario, **390**; parasite of cotton leaf-rollers in Peru, **454**; parasite of *Diparopsis watersi* in Sudan, **165**; parasitising Lepidoptera in U.S.A., **383, 487**; parasites of, **466, 487.**
Apanteles aethiopicus, parasite of Lepidoptera in French Cameroons, **365.**
Apanteles angaleti, failure to establish, against *Platyedra gossypiella* in Texas and Mexico, **352.**
Apanteles dioryctriae, **466.**
Apanteles flavovariatus, **128.**
Apanteles glomeratus, failure to establish, against *Pieris rapae* in New Zealand, **373.**
Apanteles harrisinae, parasite of *Harrisina brillians* in California, **86**; possibly disseminating virus disease of *H. brillians*, **87.**
Apanteles lacteicolor, parasite of *Theresimima ampelophaga* in Hungary, **458.**
Apanteles militaris, drought preventing control of *Pseudaletia unipuncta* by, in Tennessee, **102.**
Apanteles ornigis, parasite of *Lithocolletis malimalifoliella* in Canada, **87**; parasite of *Parornix geminatella* in

Virginia, **447**, **487**; not affected by endrin soil spray, **447**.
Apanteles procerae, parasite of *Diacrisia scotilla* in French Cameroons, **365**.
Apanteles ruficrus, parasite of Pyralid in French Cameroons, **30**, **365**; parasite of, **365**.
Apanteles sesamiae, parasite of *Sesamia* in French Cameroons, **365**; probably controlling *S. calamistis* in Uganda, **304**.
Apanteles solitarius, establishment of, against *Stilpnotia salicis* in Canada, **127**; use of, parasitising *Lymantria dispar* in Germany, **2**; bionomics of, **2**, **127**; parasites of, **127**.
Apanteles tischeriae, **390**; parasite of *Parornix geminatella* in Virginia, **487**.
Apanteles ultor, **165**.
Apechthis rufata, parasite of *Ennomos quercinaria* in Germany, **78**.
Aphanogmus nigrofornicatus, sp. n., parasite of *Aphidoletes thompsoni* in Switzerland, **469**, **470**; bionomics of, **470**.
Aphelinus mali, parasite of *Eriosoma lanigerum* in France, **139**; not affected by systemic insecticides, **139**.
Aphelinus semiflavus, parasite of *Myzocallis maculata* in Asia and Italy, **231**; introduced into U.S.A., **231**.
Aphidecta obliterata (predacious on *Chermes* spp.), bionomics of, in central Europe, **201**, **247**; possible establishment of, in Canada, **267**.
Aphidius, *Lasius niger* protecting *Aphis fabae* from, in Britain, **306**.
Aphidius platensis (*porteri*), bionomics of, in South America, **76**; synonymy of, **76**.
Aphidius testaceipes, parasite of Aphids in U.S.A., **383**; reproductive behaviour of, **383**.
Aphidoletes thompsoni, predacious on *Chermes* spp., in central Europe, **201**, **247**, **470**; seasonal activity of, **201**, **247**; new parasite of, **470**.
Aphids, and plant virus diseases, **15**, **16**, **18**, **19**, **31**, **51**, **52**, **53**, **143**, **144**, **147**, **155**, **196**, **199**, **200**, **202**, **206**, **256**, **257**, **258**, **288**, **307**, **330**, **354**, **400**, **455**, **477**, **492**, **493**, **495**, **496**, **506**; ants associated with, **306**, **307**; natural enemies of, **12**, **76**, **190**, **200**, **201**, **230**, **231**, **246**, **266**, **267**, **306**, **353**, **373**, **383**, **470**; fungi infesting, **491**; of East Africa, book on, **213**.
Aphis abbreviata, low-elevation flight of, in Maine, **51**.
Aphis craccivora, transmitting virus of *Trifolium subterraneum* in Australia, **31**; on *Gliricidia maculata* in Fiji, **507**; groundnut viruses not transmitted by, in Indonesia, **477**; on lucerne in Italy and Kenya, **230**; probably carried by aircraft from New Zealand, **507**.
Aphis fabae, in Austria, **199**, **200**; in Britain, **144**, **148**, **196**, **306**; in Bulgaria, **328**; in Germany, **400**; in U.S.A., **15**, **451**; in Yugoslavia, **288**; on beet, **328**; transmitting virus yellows of beet, **196**, **199**, **200**, **288**; experimentally transmitting virus of cabbage, **400**; not transmitting virus of *Capsicum*, **15**; on strawberry, **451**; on *Vicia faba*, **144**, **148**, **306**; seasonal abundance of, **200**, **288**; effects of temperature on development and flight of alates of, **144**, **145**, **148**; natural enemies of, **200**, **306**; fostered by *Lasius niger*, **306**, **307**; insecticides against, **38**, **451**.
Aphis frangulae, auct. (see *A. gossypii*).
Aphis gossypii, in Algeria, **206**; in Australia, **258**; in Brazil, **499**; in Egypt, **506**; in Norway, **308**; in Philippines, **354**; in Swaziland, **407**; in Tanganyika, **164**; in U.S.A., **15**, **16**, **18**, **48**, **49**, **91**, **92**, **216**, **227**, **424**, **436**, **438**, **439**, **449**, **450**, **493**; transmitting virus diseases of *Capsicum*, **15**, **493**; vector of tristeza virus of *Citrus*, **16**, **206**, **506**; on cotton, **48**, **49**, **91**, **92**, **164**, **216**, **348**, **407**, **424**, **436**, **438**, **439**, **449**, **450**, **499**, **500**, **502**; on cucurbits, **15**, **227**; not transmitting pimple virus of watermelon, **18**; transmitting mosaic of *Musa textilis*, **354**; on potato, **308**; and virus diseases of tomato, **258**; *Aphidius testaceipes* reared on, **383**; dusts against, **216**; sprays against, **48**, **164**, **216**, **354**, **407**, **436**, **438**, **439**, **450**, **493**, **499**; systemic treatments of cotton with insecticides against, **46**, **91**, **92**, **348**, **424**, **436**, **449**, **450**, **499**; not controlled by aerosols of methoxy-DDT, **227**; insecticides favouring infestation by, **407**, **438**, **439**; survey of data on, **502**.
Aphis maidis, outbreak of, on barley in Canada, **102**; measures against, transmitting mosaic of *Musa textilis* in Philippines, **354**; in U.S.A., **19**, **102**, **125**; virus disease of cereals transmitted by, **19**; investigations on resistance in sorghum to, **123**; bionomics of, **102**; mite infesting, **102**.
Aphis medicaginis, auct. (see *A. craccivora*).
Aphis nasturtii, on potato in Britain and Norway, **307**.
Aphis pomi, sprays against, on apple in France and British Columbia, **139**, **480**; map of distribution of, **240**.
Aphis rhamni, auct. (see *A. nasturtii*).
Aphis rumicis, auct. (see *A. fabae*).

Aphis spiraecola, on *Citrus* in California, **16.**
Aphis, Balsam Woolly (see *Chermes piceae*).
Aphis, Black Bean (see *Aphis fabae*).
Aphis, Cabbage (see *Brevicoryne brassicae*).
Aphis, Corn Leaf (see *Aphis maidis*).
Aphis, Cotton or Melon (see *Aphis gossypii*).
Aphis, Green Peach (see *Myzus persicae*).
Aphis, Hop (see *Phorodon humuli*).
Aphis, Potato (see *Macrosiphum solanifolii*).
Aphis, Spotted Alfalfa (see *Myzocallis maculata*).
Aphis, Strawberry (see *Capitophorus fragaefolii*).
Aphis, Woolly Apple (see *Eriosoma lanigrum*).
Aphodius howitti, bionomics and ecology of, injuring pasture in Australia, **239, 240, 375, 377**; natural enemies and diseases of, **377**; susceptibility of, to varieties of *Bacillus lentimorbus*, **191**; cultural measures against, **377**.
Aphodius pseudotasmaniae, effect of climate on distribution and importance of, in pastures in Tasmania, **239**.
Aphoebantus hirsutus, destroying grasshopper egg pods in U.S.A., **308**.
Aphrodes bicinctus, transmitting virus disease of clover in Switzerland, **470**.
Aphycus helvolus, parasite of *Saissetia oleae* in California, **433**.
Aphycus luteolus, parasite of *Pulvinaria mesembryanthemi* in Argentina, **116**.
Aphytis, identity of species of, parasitising *Pseudaulacaspis pentagona* in Bermuda and Trinidad, **268, 269**.
Aphytis bovelli, **268**.
Aphytis chrysomphali, parasite of *Aonidiella aurantii* in California, **263, 393**; effects on, of climate and food-plant of host, **263, 393**.
Aphytis diaspidis, **268**.
Aphytis lingnanensis, introduced parasite of *Aonidiella aurantii* in California, **263, 393**; effects on, of climate and food-plant of host, **263, 393**.
Aphytis maculicornis, **268**.
Aphytis mytilaspidis, establishment of introduced strain of, against *Lepidosaphes ficus* in California, **180**.
Aphytis proclia, **268, 269**.
apicalis, *Nephotettix*.
apiforme, *Trochilium* (*Aegeria*).
Apion, selection of different clovers for oviposition by species of, in Finland, **361**.
Apion apricans, on clovers and lucerne in Finland, **361**.
Apion assimile, on clovers and lucerne in Finland, **361**.
Apion chirindanum, bionomics of, on cowpeas in Natal, **109, 110**; parasites of, **110**; characters of, **110**.
Apion dichroum (*flavipes*), on clovers and lucerne in Finland, **361**.
Apion seniculum, on clovers and lucerne in Finland, **361**.
Apion ulicis, establishment of, against *Ulex europaeus* in California, **347**; other plants not attacked by, **347**.
Apion varium, bionomics of, on cowpeas in Natal, **109, 110**; parasites and disease of, **110**; morphology of, **110**.
Apion virens, on clovers and lucerne in Finland, **361**.
Aplastomorpha (see *Anisopteromalus*).
Aplomya (see *Zenillia*).
Aporia crataegi, virus causing polyhedral disease of, in Germany, **291**.
Apple, pests of, in Australia, **33, 242, 323**; pests of, in Britain, **37, 324, 325**; *Hyponomeuta* on, in Bulgaria, **117**; pests of, in Canada, **84, 85, 87, 267, 317, 480, 481, 483, 484**; pests of, in Egypt, **24, 28**; pests of, in France, **139, 394, 395, 396**; pests of, in Germany, **203, 291, 400, 402, 403, 461**; *Panonychus ulmi* on, in Holland, **463**; *P. ulmi* on, in Italy, **403, 404**; *Tetranychus kanzawai* on, in Japan, **153**; *P.* (*Metatetranychus*) *ulmi* on, in Norway, **37**; Torymid on, in Sweden, **117**; Lepidoptera on, in Switzerland, **5, 6, 205, 293, 469**; pests of, in U.S.S.R., **68, 69, 285**; pests of, in U.S.A., **58, 101, 102, 180, 260, 281, 336, 354, 445, 448, 487**; as food-plant for *Lymantria dispar* and *Hyphantria cunea*, **3**; effects on, of infestation by *P. ulmi*, **463**; high leaf-nitrogen levels increasing mite populations on, **101, 102**; sprays causing injury to, **481**.
Apple (Fruit), uses of, for rearing insects, **181, 374**; question of contamination or tainting of, by spray residues, **19, 33, 134, 281, 478**; effect of sprays on keeping qualities of, **481**; injured by sulphuryl-fluoride fumigation, **88**.
Apple Aphis, Woolly (see *Eriosoma lanigerum*).
Apple Sauce, insecticides affecting flavour of, from sprayed fruits, **281**.
apricans, *Apion*.
Apricot, *Ceratitis capitata* on, in Cyprus, **24**; *Brevipalpus* spp. on, in Egypt, **28**; *Ceratitis capitata* on, in France, **7, 77**.

Aprostocetus brevistylus, parasite of *Diopsis thoracica* in French Cameroons, **30.**
Aprostocetus diopsisi, parasite of *Diopsis* and *Pachylophus* in French Cameroons, **30, 111.**
Aprostocetus pachylophusae, sp. n., parasite of *Pachylophus* in French Cameroons, **30, 111.**
Aptesus basizona, parasite of *Diprion pini* in Czechoslovakia, **325.**
Aptinothrips rufus, on *Dactylis glomerata* in New Zealand, **257.**
aquilina, Euxoa tritici.
Arabia, *Schistocerca gregaria* in, **160, 410, 504, 505**; insects destroying eggs of *S. gregaria* in, **410.**
Araecerus fasciculatus, pyrethrum aerosol against, in stored cacao in Ghana, **273.**
Aramite (2-chloroethyl-2-(p-tert.-butylphenoxy)-1-methylethyl sulphite), against mites, **32, 34, 48, 49, 58, 140, 176, 177, 178, 214, 225, 232, 234, 261, 274, 281, 429, 442**; effect of, on natural enemies of orchard pests, **190**; in dusts, **58, 176, 177, 429**; in sprays, **32, 34, 48, 49, 140, 176, 178, 182, 190, 214, 225, 232, 234, 261, 274, 281, 429, 442**; applied from aeroplane, **429**; effect of weather conditions on, **48, 49**; and parathion, effects of, on quality of fruits, **182, 281**; and oil emulsion, **232**; and ovex, **225**; and parathion, **182**; and TEPP, **429.**
arboreus, Nasutitermes.
Arbor-vitae (see *Thuja occidentalis*).
Arbutus unedo, Euproctis chrysorrhoea on, in Yugoslavia, **3.**
Archangelica officinalis, angelica oils (*q.v.*) obtained from, **349.**
Archenomus, failure to rear, for use against *Lepidosaphes ficus* in California, **180.**
arcuatus, Syrphus.
areator, Hemiteles.
argentatus, Orosius.
Argentina, pests of *Mesembryanthemum* and maté tea in, **116, 118**; *Cryptolestes turcicus* in, **42**; parasites of noxious insects in, **76, 116**; insects attacking *Acanthospermum hispidum* in, **189.**
Argentine Ant (see *Iridomyrmex humilis*).
argillacea, Alabama.
Argina, on *Crotalaria juncea* in India, **161.**
Argyresthia spp. (on *Thuja occidentalis* in New Brunswick), characters of, **332, 333**; bionomics, parasites and control of, **391.**
Argyroploce schistaceana, on sugar-cane in Philippines, **354.**
Argyrotaenia (see *Eulia*).
Arizona, pests and virus disease of beet in, **174, 221**; *Estigmene acraea* on cotton, etc., in, **221, 222**; Lepidoptera on lettuce in, **100, 221**; insects on lucerne in, **310, 334**; *Brevipalpus lewisi* on vines in, **429**; parasites of *E. acraea* in, **222.**
Arkansas, new subspecies of *Neodiprion taedae* on pine in, **264**; *Zeadiatraea grandiosella* in, **385.**
armigera, Heliothis.
armillata, Angitia.
Aroclors (chlorinated polyphenyls), in insecticide formulations, **52, 60, 185, 451**; increasing persistence and toxicity of BHC deposits on foliage, **185.**
Arsenic, residues of, on apples, **478.**
Artemisia tridentata, Circulifer tenellus on, in Idaho, **122.**
Arthrochaeta, parasite of *Aegiale hesperiaris* in Mexico, **278.**
ascalonicus, Myzus.
ascanii, Lixus.
Asclepias, substitute for seeds of, as food for *Oncopeltus fasciatus*, **233.**
asellus, Oniscus.
Aserica castanea, experiments with milky disease organisms and, **191.**
Asiatic Rice Borer (see *Chilo suppressalis*).
Aslauga vininga, predacious on *Pseudococcus njalensis* in Ghana, **164.**
asparagi, Crioceris.
Asparagus, *Euxoa ochrogaster* on, in Canada, **388.**
Asparagus Fly (see *Platyparea poecilloptera*).
Aspen (see *Populus tremula*).
Aspergillus, in stored pepper, **339**; species of, associated with *Calandra granaria* in stored wheat, **442, 443.**
Asphalt, insecticide-treated, as barrier against *Reticulitermes hesperus*, **447.**
Aspidiotiphagus citrinus, parasite of *Pseudaulacaspis pentagona* in Bermuda and Trinidad, **268.**
Aspidiotiphagus lounsburyi, parasite of *Pseudaulacaspis pentagona* in Bermuda and Trinidad, **268.**
Aspidiotus destructor, on coconut in Dutch Guiana, **406.**
Aspidiotus hederae, on date palm in Morocco, **297.**
assamica, Manatha.
assimile, Apion.
assimilis, Ceutorhynchus; *Muscina.*
Aster (see *Callistephus*).
Aster Leafhopper (see *Macrosteles fascifrons*).

Asthenia pygmaeana, bionomics, parasite and control of, on spruce in South Tyrol, **457.**
Atanycolus charus, parasite of *Agrilus anxius* in New Brunswick, **270.**
ater, *Hylastes.*
Atherigona indica, bionomics and control of, in India, **72.**
atkinsoni, *Adisura.*
atlanticus, *Tetranychus.*
atra, *Phyllotreta*; *Pseudonapomyza.*
atratus, *Taeniothrips.*
atricornis, *Phytomyza.*
Atriplex rosea, *Circulifer tenellus* on, in Idaho, **122.**
Atrometus geniculatus, parasite of *Pammene hediella* in Switzerland, **469.**
atrovenosa, *Nisia.*
Atta, need for repeated treatment of nests for control of, in Brazil, **454.**
Attaclay (see Attapulgite).
Attagenus megatoma (*piceus*), used in tests of fumigants, **46, 88, 344;** toxicity of organophosphorus insecticides to, **231;** repellents against, **344.**
Attalus nigrellus, predacious on pests of pine in Ontario, **129, 390.**
Attapulgite (or Attaclay), adsorption of insecticides on dusts of, **339;** as granular carrier for insecticides, **56, 91, 99, 124;** effect of types of, on efficiency of DDT granules, **56.**
Aulacorthum (see *Macrosiphum*).
aulicus, *Mesoleius.*
aurantifrons, *Anagyrus.*
aurantii, *Aonidiella.*
auratus, *Rhynchites.*
aureoargentella, *Argyresthia.*
auricomus, *Platyscapulus.*
auricularia, *Forficula.*
australasiae, *Rhoecocoris.*
Australia, *Amblypelta lutescens* in, **412;** *Aphodius howitti* injuring pastures in, **376, 377;** *Dacus tryoni* in, **358, 374;** Oncomerinae of, **114;** *Scirpophaga chrysorrhoa* in, **172;** termites in, **199, 479;** pests of stored cereals in, **208, 209, 239;** natural enemies and diseases of Lamellicorns in, **191, 376.** (See also under the individual States.)
Australia, South, pests of apple in, **242, 323;** pests of pastures in, **32, 377, 378;** natural enemies of *Oncopera fasciculata* in, **377, 378;** *Trogoderma granarium* in barley exported from, **239.**
Australia, Western, *Cydia pomonella* on apple in, **33;** *Iridomyrmex humilis* in, **32;** pests of pastures in, **31, 75, 277, 278;** termites in, **357, 358.**
australis, *Brevipalpus.*
Austria, Aphids and virus yellows of beet in, **199;** forest pests in, **66, 200, 201;** use of *Beauveria bassiana* against *Leptinotarsa decemlineata* in, **280;** beneficial insects in, **200, 201.**
austrina, *Microgaster.*
Austroagallia torrida, not transmitting virus disease of *Trifolium subterraneum* in Australia, **31.**
Autographa spp., light-trap collections of, in Egypt, **29.**
Autoserica (see *Aserica*).
auxiliaris, *Chorizagrotis.*
avenae, *Macrosiphum.*
Avocado, *Oligonychus yothersi* on, in Florida, **386;** Scolytid infesting seeds of, **98.**
azaleae, *Eriococcus.*
Azobenzene, in sprays against *Steneotarsonemus pallidus*, **441.**
Azteca paraensis var. *bondari*, BHC treatment of nests of, on cacao in Brazil, **318.**

B.

baccarum, *Dolycoris.*
bacchus, *Rhynchites.*
Bacillus cereus, *Cydia pomonella* not controlled by sprays of, in British Columbia, **317.**
Bacillus euloomarahae, sp. n., infecting *Heteronychus sanctae-helenae* in Australia, **158, 191;** experiments with, against *Oryctes rhinoceros* in Samoa, **158, 191;** susceptibility of other Lamellicorns to, **191.**
Bacillus fribourgensis, sp. n., investigations on, infecting *Melolontha melolontha* in Switzerland, **468.**
Bacillus lentimorbus, tests of strain of, against *Amphimallon majalis* and *Popillia japonica* in New York, **230;** susceptibility of other Lamellicorns to, **158, 191.**
Bacillus lentimorbus var. *australis*, n., infecting *Sericesthis pruinosa* in Australia, **158, 191;** experiments with, against *Oryctes rhinoceros* in Samoa, **158;** susceptibility of other Lamellicorns to, **191.**
Bacillus popilliae, tests of strains of, against *Amphimallon majalis* and *Popillia japonica* in New York, **230;** *Oryctes rhinoceros* not very susceptible to, in Palau Is., **158;** other milky-disease bacteria compared with, **191, 468, 469.**
Bacillus thuringiensis, isolation and use of strain of, infecting *Adisura atkinsoni*

in Mysore, **472, 473**; experiments with, against other Lepidoptera, **159, 217, 289**; *Oryctes rhinoceros* little susceptible to, in Palau Is., **158**.
Bacteria, infecting insects, **290, 377, 398, 468** (see also *Bacillus* spp.); relation of insects to, infecting plants, **74, 75, 279**.
baculus, Mepachymerus (*Steleocerus*).
bahiana, Bemisia (see *B. tabaci*).
bahiense, Monalonion.
Bait-sprays, against fruit-flies, **24, 90, 91, 446, 448**; applied from aircraft, **448**.
Baits, for *Cotinis nitida*, **59, 60**; for cutworms, **206, 388**; for *Dacus dorsalis*, **91**; for locusts, **160, 504**; for *Tipula paludosa*, **483**.
bajulus, Hylotrupes.
bakeri, Helopeltis.
Balanogastris kolae, on *Cola* in French West Africa, **407**.
Balsam Fir (see *Abies balsamea*).
Balsam-fir Seed Chalcid (see *Megastigmus specularis*).
Balsam Woolly Aphis (see *Chermes piceae*).
balteata, Diabrotica.
balteatus, Collops.
Bamboo Grass (see *Hymenachne amplexicaulis*).
Banana, *Dacus dorsalis* on, in Hawaii and India, **90, 475**; *Amblypelta lutescens* on, in Queensland, **412**; weevils on, in Uganda, **367, 409, 410**.
Banasa dimidiata, injury to peaches by, in Ohio, **434**.
Bands, for trapping *Eotetranychus pomi*, **292**; adhesive, for trapping *Eriosoma lanigerum*, **336**.
Banks Island, *Amblypelta lutescens* in, **412**.
banksi, Eutetranychus.
banksianae, Neodiprion pratti.
Baobab (see *Adansonia digitata*).
Barathra brassicae (see *Mamestra*).
Barium Chloride, ineffective as dust against *Laphygma exigua*, **244**.
Barium Fluosilicate, ineffective in bait against *Cotinis nitida*, **60**.
Bark-beetles, relation of, to *Ceratostomella ulmi*, **387, 483**; reactions of, to α-pinene, **207**; natural enemies of, **202, 269, 333, 489**; measures against, **218, 238, 387, 427**.
Barley, factors affecting infestation of, by *Lema melanopa* in Bulgaria, **118**; *Aphis maidis* on, in Canada, **102**; *Pseudonapomyza atra* on, in Egypt, **24**; *Oria musculosa* on, in France, **205**; *Scatopse nigra* on, in Turkey, **152**; relation of forms of *Oscinella frit* to, in U.S.S.R., **80, 81**; Aphids on, in U.S.A., **18, 19, 178, 341**; relation of Aphids to virus disease of, **18, 19**; studies of injury to, by Aphids, **178, 341**; used for rearing Cicadellid vectors of virus diseases, **96, 146**.
Barley (Stored), pests in, **173, 208**; effect of methyl-bromide fumigation on germination of, **324**.
Barylypa rufa, parasite of *Oria musculosa* in France, **205**.
basipennis, Temnoschoita.
basizona, Aptesis (*Microcryptus*).
Bassia hyssopifolia, Circulifer tenellus on, in Idaho, **122**.
Bathyplectis curculionis, parasite of *Hypera variabilis* in Poland, **458**.
Batrachedra, insecticides against, on *Agave sisalana* in Mexico, **279**.
Batrachedra amydraula, on date palm in Libya, **297**.
Bayer 16259 (see O, O-Diethyl S-(4-Oxo-benzotriazino-3-methyl) Phosphorodithioate).
Bayer 17147 (see O, O-Dimethyl S-(4-Oxo-benzotriazino-3-methyl) Phosphorodithioate).
Bayer 19639 (see O, O-Diethyl S-2-(Ethylthio)ethyl Phosphorodithioate).
Bayer 23129 (see O, O-Dimethyl S-2-(Ethylthio)ethyl Phosphorodithioate).
Bayer L 13/59 (see Dimethy 2,2,2-Trichloro-1-hydroxyethylphosphonate).
Bdella depressa, bionomics of, in Illinois, **47**.
Bean Aphis, Black (see *Aphis fabae*).
Bean Beetle, Mexican (see *Epilachna varivestis*).
Bean Cutworm, Western (see *Loxagrotis albicosta*).
Bean Fly (see *Melanagromyza phaseoli*).
Beans, new Cicadellids on, in Central American and Caribbean Regions, **310**; pests and disease of, in Australia, **74, 75, 322**; *Acanthoscelides obtectus* on, in France, **194, 361**; pests of, in Hawaii, **104, 214**; *Smynthurodes betae* on, in India, **297**; Tetranychid on, in Mauritius, **167**; pests of, in U.S.A., **188, 227**; as food-plant in studies of *Tetranychus* spp., **27, 103, 104, 439**; effects of soil insecticides on composition, growth and nutritive value to *T. telarius* of, **432, 433**; translocation of BHC in, **54**; metabolism of phosphorodithioates in, **229**; schradan residues in, **33**; effect of, on infestation of wheat by *Hylemyia coarctata*, **169**.
Beans (Stored), investigations relating to infestation of, by *Acanthoscelides obtectus*, **39, 194, 335**.

Beans, Broad or Field (*Vicia faba*), *Aphis fabae* on, in Britain, **144, 148, 306**; varieties of, in relation to *Bruchus rufimanus* in Germany, **203**; virus disease transmitted to, by *Macrosiphum* spp., in Holland, **330**; experiments with *M. pisum* and, in U.S.A., **62, 63**; effect of rearing *Callosobruchus maculatus* in seeds of, **25**.
Beans, Lima (see Lima Beans).
Beauveria, infesting *Melolontha* in Germany and Switzerland, **290, 468**; experiments with, infesting *Leptinotarsa decemlineata* in Poland, **328**.
Beauveria bassiana, infesting *Choristoneura murinana* in Czechoslovakia, **398**; *Sitona cylindricollis* killed by, in Minnesota, **180**; experiments with, against *Leptinotarsa decemlineata*, **279, 280, 328**; culture of, **180, 279**.
Beauveria globulifera, infesting *Choristoneura murinana* in Czechoslovakia, **398**; infesting *Sitona hispidulus* in Texas, **441**.
beckii, *Lepidosaphes*.
Beech, pests of, in Germany, **78, 247**; *Lymantria dispar* on, in U.S.S.R., **68**; *Lymantria* spp. on, in Yugoslavia, **3, 397**; effect of, on development of *L. dispar*, **3**.
Bees, Bumble (see *Bombus*).
Bees, Honey, genetics and breeding of, **255**; effects of insecticides on, **141, 374, 448**.
Bees, Leaf-cutting (see *Megachile*).
Beet, Aphids on, in Austria, **199, 200**; bulletin on pests of, in Britain, **196**; pests of, in Bulgaria, **328**; pests of, in France, **194, 205**; pests of, in Germany, **67, 204**; *Lixus* spp. on, in Israel, **420**; pests of, in Poland and Rumania, **80**; Cicadellid on, in Sweden, **80**; pests of, in U.S.S.R., **80, 244, 245**; pests of, in U.S.A., **52, 123, 174, 221, 280, 309, 424, 425**; *Aphis fabae* on, in Yugoslavia, **288**; insects and virus diseases of, **52, 67, 80, 155, 174, 196, 199, 200, 288, 495, 496, 498**; treatment of, with systemic insecticides, **423, 424, 425**; effects of insecticide treatments on, **123, 124, 425**; conference on, **79**.
Beet Leafhopper (see *Circulifer tenellus*).
begini, *Solenotus*.
Belgium, *Neodriprion sertifer* on pine in, **404**.
Bell Peppers (see *Capsicum*).
bellicosa, *Dorcathispa*.
Bembidion spp., destroying eggs of *Hylemyia brassicae* in Ontario, **191**.
Bemisia bahiana, *goldingi*, *gossypiperda* (with var. *mosaicivectura*), *hibisci*, *inconspicua*, *longispina*, *nigeriensis* and *rhodesiaensis* (see *B. tabaci*).
Bemisia tabaci, in India, **275**; bionomics of, in Israel, **418, 419**; in Kenya, **497**; in Sudan, **108, 109, 368**; in Uganda, **497**; on cotton, **108, 109, 368, 502**; effects of infestation of cotton by, **108, 109**; on other plants, **275, 418, 419, 497**; virus diseases transmitted by, **275, 497**; parasite of, **419**; sprays against, **109, 368**; sawdust mulching against, **419**; synonymy of, **136**; survey of data on, **502**.
beneficus, *Euspudaeus*.
Bentonite, as granular carrier for DDT, **56**.
Benzene, emulsified solutions of insecticides in, **470**.
Benzoxazol-2-ylmethyl p-Chlorophenyl Sulphide, toxicity of, to Tetranychid eggs and larvae, **382**.
Benzyl p-Chlorothiolobenzoate, toxicity of, to Tetranychid eggs and larvae, **272**.
Benzyl Heterocyclic Sulphides, and derivatives, tests of, against Tetranychid eggs and larvae, **381, 382**.
N - Benzyl - N - methylbenzenesulphenamide, and derivatives, tests of, against Tetranychid eggs and larvae, **272**.
Benzyl p-Nitrothiolobenzoate, toxicity of, to Tetranychid eggs and larvae, **272**.
Benzyl Phenyl Sulphide, tests of derivatives of, against Tetranychid eggs and larvae, **272, 273, 380, 381, 382**.
Benzyl Thiolobenzoate, and derivatives, tests of, against Tetranychid eggs and larvae, **272**.
bergrothi, *Helopeltis*.
berlesei, *Bryobia*.
Bermuda, list of Coccids of, **196**; natural enemies and biological control of Coccids in, **196, 268, 269, 416**; lizards destroying natural enemies of Coccids in, **416**.
Bermuda Cedar (see *Juniperus bermudiana*).
Berseem (see *Trifolium alexandrinum*).
Beskia, parasite of *Solubea poecila* in British Guiana, **120**.
betae, *Pegomyia hyoscyami*; *Smynthurodes*.
Betula (see Birch).
BHC, against Acrididis, **160, 406, 412, 502, 503, 504, 505, 506**; against other Orthoptera, **107, 154, 155, 279**; against ants, **318**; against Aphids, **38, 48, 49, 164, 175, 216, 227, 256, 354**; against Cicadellids, **227, 279, 477**; against Coccids, **112, 116, 396**; against Mirids, **30, 107, 209, 210, 211, 212, 219, 254,**

319; against other Hemiptera, 73, 137, 229, 245, 500; against *Cotinis nitida*, 55, 56, 60; against Curculionids, 47, 48, 142, 185, 279, 341, 344, 361, 428, 438, 441, 462; development of resistance to, in *Anthonomus grandis*, 450; against Elaterids, 282, 451; against Galerucids, 91, 163, 185; against Melolonthids, 204, 205, 375; against other Coleoptera, 47, 105, 149, 216, 223, 227, 248, 313, 329, 409; against *Hylemyia* spp., 271, 389, 431, 434; against other Diptera, 72, 91, 204, 373, 434; against Noctuids, 44, 48, 49, 52, 107, 137, 154, 164, 165, 212, 227, 407; against other Lepidoptera, 14, 47, 69, 95, 221, 227, 244, 259, 260, 279, 329, 379, 380, 401, 418, 453, 457, 506; against *Sminthurus viridis*, 278; against termites, 151, 164, 225, 447; against Thysanoptera, 6, 349; against mites, 50, 53, 54, 227, 277, 278, 442; laboratory tests of toxicity of, to insects, 7, 8, 38, 55, 101, 107, 133, 134, 149, 154, 162, 174, 216, 237, 279, 301, 319, 344, 391, 392, 408, 418, 420, 422, 427, 436, 447, 450, 470, 486; toxicity of, to fish, 277; outdoor fumigant action of, 209; systemic action of, 54, 229, 379, 380, 401; duration of effectiveness of, 47, 151, 225; effects of weather on toxicity of, 48, 49; effect of, on plants, 20, 21, 154, 205, 341, 375, 389, 432, 433, 451, 471; question of tainting by, 54, 227, 282; problem of residues of, 47, 54, 56, 282; in aerosols, 227, 457; in baits, 160, 504; in dusts, 8, 14, 30, 39, 44, 50, 52, 53, 60, 69, 72, 95, 101, 105, 120, 133, 134, 151, 160, 162, 163, 174, 209, 212, 216, 221, 244, 271, 277, 279, 301, 329, 344, 361, 375, 380, 406, 408, 418, 422, 438, 453, 462, 486, 502, 503, 505, 506; in granules, 185, 441; in sprays, 6, 38, 44, 48, 49, 56, 72, 73, 91, 95, 107, 116, 137, 154, 164, 165, 175 185, 209, 210, 211, 212, 216, 229, 245, 248, 254, 256, 259, 260, 271, 279, 313, 319, 329, 349, 354, 361, 373, 391, 392, 396, 407, 412, 418, 420, 422, 428, 431, 434, 442, 470, 477, 486, 502, 503, 506; applied from aircraft, 244, 411, 412, 418, 506; seed treatment with, 20, 21, 93, 204, 341, 389, 431, 451; treatment of other planting material with, 112, 361, 401; soil treatment with, 69, 91, 151, 164, 204, 205, 216, 223, 225, 229, 244, 282, 375, 380, 389, 401, 417, 431, 432, 441, 500; effect of, on soil micro-organisms, 156; effect on *Tetranychus* spp. of feeding on plants in soil treated with, 432, 433; application of, in fertiliser, 277, 375; use of, on sawdust, 47, 105; treatment of timber with, 151, 409; uses of, against pests of stored products, 47, 149; solutions of, 39, 227, 391, 409, 412, 427, 450, 451; emulsified solutions of, 8, 44, 48, 49, 107, 112, 162, 164, 209, 216, 223, 229, 279, 401, 412, 422, 428, 431, 470, 503; in wettable-powder suspensions, 154, 162, 185, 223, 259, 313, 341, 401, 420, 503; and Aroclor 5460, 185, 451; and calcium arsenate, 438; and 2, 4-D, 418; and DDT, 44, 52, 95, 164, 165, 216, 221, 259, 260, 301, 344, 349, 407, 438; and dieldrin, 462; and Dilan, 227; and organic fungicides, 93; and heptachlor, 428; and lime, 69; and methoxy-DDT, 438; and oil emulsion, 116, 396; and pentachlorophenol, 151; and sulphur, 52, 221, 438; and toxaphene, 221; as lindane, 14, 47, 53, 54, 55, 60, 91, 93, 107, 120, 185, 204, 216, 223, 227, 229, 237, 256, 259, 278, 282, 341, 375, 380, 389, 420, 428, 431, 432, 434, 436, 441, 442, 447, 450, 470, 471, 486; γ isomer of, 7, 8, 14, 20, 21, 30, 38, 39, 44, 47, 49, 50, 52, 53, 54, 55, 56, 60, 73, 91, 93, 107, 116, 120, 133, 134, 141, 149, 154, 155, 162, 164, 175, 185, 204, 205, 209, 210, 211, 212, 216, 221, 223, 225, 227, 229, 237, 248, 254, 256, 259, 260, 271, 277, 279, 282, 313, 341, 349, 373, 375, 380, 389, 391, 392, 401, 409, 412, 418, 420, 422, 427, 428, 431, 432, 434, 436, 437, 438, 441, 442, 447, 450, 451, 453, 462, 470, 471, 486, 502, 503, 504, 505, 506; bioassay of, 38, 39, 436, 437; proprietary preparations containing, 73, 209, 462.

Bhendi (see *Hibiscus esculentus*).

bicinctus, Aphrodes.

bidentata, Euetheola (*Dyscinetus*).

bifasciata, Comperiella.

Bignonia, Orthezia insignis on, in Egypt, 27.

biharensis, Oligonychus.

bilineata, Eleochara.

bilobata, Euscelis.

bimaculatipennis, Sympiesis.

bimaculatus, Tetranychus (see *T. telarius*).

Bioassay, of organic insecticides, 38, 39, 99, 436.

Biological Control, of insect pests, general paper on, 255; of noxious plants, 188, 347, 509.

bipars, Oiketicoides.

biplaga, Earias.

bipunctata, Adalia.

bipustulatus, Chilocorus.

Birch, *Agrilus anxius* on, in Canada, **269**; *Xylotrechus colonus* in logs of, in New York, **126**; *Hylobius piceus* on, in Sweden, **142**; experiments with *Lambdina fiscellaria* and, **128**.
Birch Borer, Bronze (see *Agrilus anxius*).
Birds, destroying noxious insects, **69, 140, 270, 293, 294, 377, 378, 471**; facilitating insecticidal control of *Schistocerca gregaria*, **471, 472**; suggested introduction of, into Bermuda against lizards, **416**.
birmanica, Galerucella.
1, 2-Bisbenzylthioethylene, and derivatives, tests of, against Tetranychid eggs and larvae, **272**.
Bis-p-chlorobenzyl Disulphide, toxicity of, to Tetranychid eggs and larvae, **272**.
Bis(p-chlorophenyl)acetic Acid, adsorption of, on dust diluents, **339**.
1, 1 - Bis(p-chlorophenyl) - 2, 2 - dichloroethanol, in sprays against *Tetranychus telarius*, **176**.
1, 1 - Bis(p-chlorophenyl) - 2, 2 - dichloroethylene, adsorption of, on dust diluents, **339**.
1, 1-Bis(p-chlorophenyl)ethanol, in sprays against mites, **261, 281**; question of tainting by, **281**.
Bis(p-chlorophenyl)-ethynylcarbinol, against mites, **176, 281**; in dust, **176**; in sprays, **281**; affecting flavour of peaches, **281**.
1, 1-Bis(p-chlorophenyl)-2, 2, 2-trichloroethanol, against mites, **176, 177, 234, 261, 429**; in dusts, **176, 177**; in sprays, **176, 234, 261, 429**; other ingredients in sprays containing, **234, 429**; residues of, in pulp and peel of oranges, **234**.
Bis(dialkyloxyphosphinothioyl) Disulphides, tests of toxicity of proprietary mixture of, to stored-product insects, **236**.
Bis (dimethylamino) fluorophosphine Oxide (see Dimefox).
Bis(dimethylthiocarbamoyl) Disulphide, compatibility of insecticides with, for treatment of maize seed, **93**.
1,1-Bis(p-ethylphenyl)-2,2-dichloroethane (see Ethyl-DDD).
Bis-p-fluorobenzyl Disulphide, toxicity of, to Tetranychid eggs and larvae, **272**.
bisignata, Meigenia.
1, 1-Bis(p-methoxyphenyl)-2,2-dichloroethylene, reactions of, on dust diluents, **339**.
Bis-2-phenylethyl Disulphide, toxicity of, to Tetranychid eggs and larvae, **272**.
1, 2-Bisphenylthioethane, toxic to Tetranychid eggs and larvae, **271**; phytotoxicity of, **271**.
Bisphenylthiomethane, toxic to Tetranychid eggs and larvae, **271**; phytotoxicity of, **271**.
bisselliella, Tineola.
Bittersweet (see *Solanum dulcamara*).
bivittatum, Trypodendron.
bivittatus, Melanoplus.
Black Hills Beetle (see *Dendroctonus ponderosae*).
Black Leaf 253, **487**.
Blackberry, malathion residues on fruits of, **232**.
blanchardii, Parlatoria.
Blapstinus, seed treatment with systemic insecticide controlling, on cotton in California, **424**.
Blaptocampus nigricornis, parasite of *Choristoneura murinana* in France, **466**.
Blatta orientalis, effect of temperature on permeability of cuticle of, **83**.
Blattella germanica, comparison of toxicity of organophosphorus insecticides to, **231**; used in tests of sulphuryl-fluoride fumigation, **88**.
Blepharidopterus angulatus, population study of, in apple orchard in England, **249, 250**.
Blepharomastix acutangularis, introduced into Fiji against *Lantana camara*, **105**.
Blistercress (see *Erysimum repandum*).
Blondelia nigripes, parasite of *Ennomos quercinaria* in Germany, **78**.
Blood, used for feeding *Hylemyia coarctata*, **43**.
Blood Albumin, as emulsifier for oils, **354**.
Bloodiella, **365**.
Blueberry, types of injury to, by *Frankliniella vaccinii* in Canada, **193**.
boetica, Cosmolyce (*Lampides*).
bohemica, Sturmia (*Drino*).
Bolivia, new weevil on potato in, **357**.
Bollworms (see Cotton Bollworms).
bombiformis, Merodon.
Bombus, toxicity of phosphorus insecticides to, **231, 374**.
Bombyx mori, chemicals increasing susceptibility of, to virus disease, **431**; not infected with virus from *Euproctis* spp., **37**.
bondari, Azteca paraensis; *Monalonion.*
Bones, *Dermestes maculatus* infesting, **149**.
Bordeaux Mixture, treatment of poplar cuttings with, against *Gypsonoma aceriana*, **284**; compatibility of dieldrin with, **107**.

borealis, Osbornellus.
Boriomyia quadrifasciata (see *Wesmaelius*).
boron, Trogoderma (see *T. glabrum*).
botanephaga, Sesamia.
Bothynoderes (see *Cleonus*).
bougainvillensis, Amblypelta gallegonis.
Bourletiella hortensis, Bdella depressa predacious on, in Illinois, **47.**
bovelli, Aphytis.
bovista, Megaselia.
Bovril, used for feeding *Hylemyia coarctata*, **302.**
Box (see *Buxus*).
Brachmia, parasites of, on rice in French Cameroons, **365.**
Brachycaudus helichrysi (see *Anuraphis padi*).
Brachycyttarus subtalbatus, on tea in India, **114.**
Brachymeria altisquama, parasite of *Brachmia* in French Cameroons, **365.**
Brachymeria globata, hosts of, in French Cameroons, **365.**
Brachymeria olethrius, parasite of *Marasmia trapezalis* in French Cameroons, **365.**
Brachytrupes membranaceus, in French West Africa, **407**; bionomics of, in Southern Rhodesia, **166.**
Brachytydeus (see *Tydeus*).
Bracon, parasite of rice pests in French Cameroons, **111, 365.**
Bracon annulicornis, **111.**
Bracon antennatus, parasite of *Diopsis curva* in French Cameroons, **30.**
Bracon brevicornis, failure to establish, in Texas and Mexico against *Platyedra gossypiella*, **352**; parasite of *Diparopsis watersi* in Sudan, **165.**
Bracon cajani, establishment of, against Pyralids in Mauritius, **421.**
Bracon gelechiae, introduced parasite of *Gnorimoschema operculella* in India, **13, 474**; failure to establish, in Texas and Mexico against *Platyedra gossypiella*, **352**; effects of rearing, on various hosts, **13.**
Bracon hebetor, parasite of Lepidoptera in Mauritius, **421.**
Bracon lissogaster, parasitising *Cephus cinctus* in Montana, **122**; bionomics of, **122.**
Bracon palpebrator, parasite of *Pissodes notatus* in Italy, **362.**
Bracon quadratinotatus, parasite of *Sesamia* in French Cameroons, **365.**
Bracon quadratinotatus var. *sesamiae*, parasite of *Sesamia* in French Cameroons, **30.**
Bracon rhyacioniae, parasite of pine-cone insects in Ontario, **130, 315.**
braconiphagus, Ceraphron.
Bran, in baits, **59, 160, 206, 388, 483, 504.**
brassicae, Aleyrodes (see *A. proletella*); *Brevicoryne*; *Dasyneura*; *Hylemyia* (*Chortophila, Erioischia, Phorbia*); *Mamestra* (*Barathra*); *Pieris.*
Brassolis sophorae, on coconut in Dutch Guiana, **406.**
Brazil, pests of cacao in, **317, 318**; *Leucoptera coffeella* on coffee in, **453**; *Aphis gossypii* on cotton in, **499**; *Scaptocoris castaneus* on sugar-cane in, **500**; *Atta* in, **454**; *Aphidius platensis* parasitising peach Aphids in, **76**; insects attacking *Acanthospermum hispidum* in, **189**; new Nitidulid on Brazil nuts imported into Britain from, **66.**
Brazil Nuts, new Nitidulid on imported, in Britain, **66.**
Bremia, predacious on Psyllids, **491.**
brevicomis, Dendroctonus.
brevicornis, Bracon.
Brevicoryne brassicae (on crucifers), in Britain, **143, 144, 463, 464**; in New Zealand, **255, 256, 272, 273**; in U.S.A., **227, 386, 430**; relation of, to virus diseases, **143, 144**; assessment of damage by, **463**; parasite and hyperparasite of, **373**; insecticides against, **144, 227, 256, 386, 430, 464**; plant barriers to protect seed beds from, **144.**
Brevipalpus, key to Egyptian species of, **28.**
Brevipalpus australis, on fruit trees, vines, etc., in Egypt, **28.**
Brevipalpus geisenheyneri, redescription of, **28.**
Brevipalpus inornatus, plants attacked by, in Egypt and Japan, **28, 153.**
Brevipalpus lanceolatisetae, sp. n., on fruit trees in Egypt, **28.**
Brevipalpus lewisi, in Egypt, **28**; in U.S.A., **225, 429**; on *Citrus*, **225, 429**; on vines, **28, 429**; bionomics and other food-plants of, **429**; acaricides against, **225, 429.**
Brevipalpus (*Tenuipalpus*) *obovatus*, *Brevipalpus australis* recorded as, in Egypt, **28.**
Brevipalpus olearius, on olive in Egypt, **28.**
Brevipalpus phoenicis, plants attacked by, in Egypt and Mauritius, **28, 167.**
Brevipalpus pyri (see *B. geisenheyneri*).
brevipes, Dysmicoccus (*Pseudococcus*).
brevis, Cryptotermes.

breviscapus, Mesochorus.
brevistylus, Aprostocetus (*Tetrastichus*).
breviuscula, Chaetocnema.
brillians, Harrisina.
Brinjal (see Egg-plant).
Britain, Aphids on field beans in, **144, 148, 306;** ant and natural enemies associated with bean Aphid in, **306;** bulletin on beet pests in, **196;** pests of crucifers in, **143, 144, 463;** potato Aphids in, **147, 307;** *Hylemyia coarctata* on wheat in, **168–170, 302, 465;** Ichneumonid and fungus infesting *H. coarctata* in, **43;** other species of *Hylemyia* in, **305;** pests of hops in, **114, 115;** pests and predacious bugs in orchards in, **37, 249, 324, 405;** *Dasyneura tetensi* on black currant in, **248;** pests of strawberry in, **145, 146, 202;** pests of greenhouse and ornamental plants in, **25, 146, 456, 464, 509;** *Megaselia* spp. on mushrooms in, **81, 82;** pests of conifers in, **25, 142, 143, 207, 361;** pests of willow in, **457;** pests of stored products in, **42, 64, 149, 209, 240, 242, 243, 263;** Coleoptera imported into, in stored products, **66, 149;** *Anomala horticola* in, **82;** *Forficula auricularia* in, **37, 82;** *Myzus padellus* on *Prunus padus* in, **308;** insects and virus diseases of plants in, **143, 144, 145, 146, 147, 196, 202, 307, 456;** bulletin on beneficial insects in, **282;** virus diseases in Lepidoptera in, **198;** list of popular names of insects in, **156.**
Brithys crini, bionomics of, on *Crinum* spp. in India, **422;** tests of insecticides against, **422.**
British Columbia, pests of apple in, **317, 480, 481;** pests of field and vegetable crops in, **98, 270, 388, 389, 480;** pests of forest trees and timber in, **10, 183, 191, 265, 387;** *Hofmannophila pseudospretella* damaging lead of cables in, **270;** use of disease of *Cydia pomonella* in, **317;** parasite of *Lambdina fiscellaria* introduced into Newfoundland from, **128.**
Brochymena quadripustulata, injury to peaches by, in Ohio, **434.**
Bromides, factors affecting fumigant toxicity of alkyl, **207.**
p-Bromobenzyl p-Bromophenyl Sulphide, toxicity of, to Tetranychid eggs and larvae, **273.**
Brontispa longissima, importance of, on coconut in Solomon Is., **300;** failure to establish parasites against, **300;** experiments with insecticides against, **301.**
brontispae, Tetrastichus.
Bronze Birch Borer (see *Agrilus anxius*).
Bronze Orange-bug, nomenclature of Australian, **114.**
Broomsedge (see *Andropogon virginicus*).
Bruchidius alfierii (see *B. trifolii*).
Bruchidius chinensis (Thnb.), *B. thunbergi* unnecessary as new name for, **416.**
Bruchidius thunbergi (see *B. chinensis*).
Bruchidius trifolii, bionomics of forms of, on *Trifolium alexandrinum* in Egypt, **26.**
Bruchobius, species of, parasitising *Adelpherupa* in French Cameroons, **30, 365.**
Bruchobius garouae, sp. n., parasite of *Adelpherupa* in French Cameroons, **30.**
Bruchobius laticeps, parasitising *Bruchus lentis* in Algeria, **112;** parasite of, **112.**
Bruchobius yagouae, sp. n., parasite of *Adelpherupa* in French Cameroons, **30.**
bruchophagi, Amblymerus.
Bruchophagus caraganae, bionomics of, on *Caragana* spp. in Canada, **189, 190;** parasites of, **189.**
Bruchus chinensis Thnb. (see *Bruchidius*).
Bruchus lentis, bionomics of, on lentils in Algeria, **111, 112;** parasites and control of, **112.**
Bruchus marshalli (see *Callosobruchus rhodesianus*).
Bruchus rufimanus, variation in infestation of varieties of *Vicia faba* by, in Germany, **203.**
Bruchus vicinus (see *Callosobruchus maculatus*).
Bruchus vicinus var. *subinnotatus* (see *Callosobruchus subinnotatus*).
brumata, Operophtera.
bruneri, Scyllinops.
bruniqueli, Alcidodes.
brunneri, Coeloides.
brunneus, Coptotermes; *Ptinus* (see *P. clavipes*).
Brussel Sprouts, *Brevicoryne brassicae* on, in England, **463;** pests of, in U.S.A., **386, 430.**
Bryobia berlesei, sp. n., **318.**
Byrobia cristata, bionomics of, in France, **318;** redescription of, **318.**
Bryobia praetiosa, sens. lat., in Germany, **203, 403;** in New Zealand, **33;** in U.S.A., **47, 177, 281;** on almond, **281;** on fruit trees (see also *B. rubrioculus*), **281, 403;** on other plants, **33, 47, 177;** habits of, invading houses, **177;** mites predacious on, **47, 203, 403;** measures and experiments against, **33, 177, 281.**
Bryobia rubrioculus, on peach and plum in France, **138, 139, 318;** sprays against, **138, 139.**

Bryobia speciosa, *B. berlesei* misidentified as, **318.**
bubalus, *Ceresa.*
Bucculatrix thurberiella, systemic insecticides against, on cotton in U.S.A., **449.**
Buffalo-bur (see *Solanum rostratum*).
Building Timber, termites attacking, **151, 358, 503;** other insects in, **158, 463.**
Bulgaria, miscellaneous pests and beneficial insects in, **117, 328, 329.**
Bulrush Millet (see *Pennisetum typhoides*).
Bumble Bees (see *Bombus*).
buoliana, *Rhyacionia.*
buolianae, *Lissonota.*
Bupalus piniarius, egg-parasite of, in central Europe, **399;** experiments with virus disease of *Vanessa cardui* and, **198.**
buscki, *Drosophila.*
Busseola fusca (on cereals), distribution of, in Ghana, **152;** in S. Rhodesia, **364;** in Tanganyika, **39, 40;** in Uganda, **303, 304;** on sugar-cane, **303;** on grasses, **303, 364;** bionomics of, **40, 304, 364;** measures against, **40, 364.**
Busseola phaia, on *Pennisetum purpureum* in S. Rhodesia, **364.**
Busseola segeta, on cereals and grasses in Uganda, **303, 304;** life-cycle of, **304.**
Butter, insecticide residues in, **99.**
buxi, *Monarthropalpus*; *Psylla.*
Buxus (Box), pests of, in Maryland, **96, 97.**
bykovi, *Hemitrama.*

C.

Cabbage, pests of, in Canada, **192, 270;** *Hylemyia brassicae* on, in Czechoslovakia, **326;** insects and virus diseases of, in England and Germany, **143, 144, 400;** other pests of, in Germany, **292, 401;** *Plutella maculipennis* on, in Indonesia, **159;** *Ceresa bubalus* on, in Moldavia, **245;** pests of, in U.S.A., **92, 227, 386, 430;** experiments with *Ceutorhynchus* spp. and, **462;** used as food for *Schistocerca gregaria*, **363;** schradan residues in, **33;** injured by Triton X-160, **386.**
Cabbage Aphis (see *Brevicoryne brassicae*).
Cabbage Armyworm (see *Mamestra brassicae*).
Cabbage Looper (see *Trichoplusia ni*).
caberata, *Sabulodes.*
Cables, Telephone, *Hofmannophila pseudospretella* damaging lead sheathing of, in British Columbia, **270.**
Cacao, pests of, in Brazil, **317, 318;** pests of, in West Africa, **112, 163, 164, 209–212, 254, 407, 417;** pests of, in Ceylon, **30, 112, 113;** Coreid on, in New Britain, **413;** pests of, in New Guinea, **106, 412, 413;** pests of, in Philippines, **106, 107, 354;** Coreid on, in Solomon Is., **413;** mealybugs and virus diseases of, **112, 113, 163, 210–212, 417.**
Cacao (Stored), insects infesting, **212, 273.**
Cacoecia murinana (see *Choristoneura*).
Cacoecia rosana (see *Tortrix*).
cacoeciae, *Nosema*; *Trichogramma.*
cacti, *Chilocorus.*
Cadelle (see *Tenebroides mauritanicus*).
caesar, *Zenillia* (*Aplomya*).
Cages, for rearing or studying insects, **96, 118, 169, 302, 358;** for study of spread of virus disease of potato, **492.**
cajani, *Bracon* (*Microbracon*).
Cajanus cajan, pests of, in Mauritius, **421.**
calamistis, *Sesamia.*
Calandra granaria, in Canada, **392;** parasite of, in Holland, **284;** in Nigeria, **150;** in U.S.A., **173, 442;** in Yugoslavia, **5;** in stored cereals, **5, 173, 285, 392;** *Aspergillus* spp. associated with, in stored wheat, **442, 443;** amount of food required by, **173;** reactions of, to water traps, **392;** tests of fumigants against, **5, 46, 88, 170, 171, 207;** other experiments against, **150, 171, 285;** used in tests of toxicity of insecticides, **38, 39, 141, 236, 330;** susceptibility to insecticides of strains of, **133, 134.**
Calandra oryzae, in Australia, **208, 209;** in England, **209;** in India, **208;** in Japan, **208, 209;** in Nepal, **208;** in Nigeria, **150, 212;** in U.S.A., **47, 173, 238;** in Venezuela, **452;** in field cereals, **209, 212;** in stored cereals, **47, 173, 208, 209, 212, 238, 298, 312, 452;** effect of infestation by, in rice, **208;** effect of storage conditions on infestation by, **471;** tests of fumigants against, **170, 171, 298;** other experiments against, **47, 150, 171;** effect of presence of, on other stored-product beetles, **238, 312;** differentiation of *C. sasakii* (*q.v.*) from, **208.**
Calandra oryzae var. *minor* (see *C. sasakii*).
Calandra sasakii (or small form of *C. oryzae*), bionomics, distribution and status of, **208;** study of movements of, in wheat stored in bags, **161.**

Calcium Arsenate, dusting with, against cotton pests, **48, 344, 438, 439;** favouring infestation by *Aphis gossypii*, **439;** reactions of strains of *Anthonomus grandis* to, **344;** ineffective against *Laphygma exigua*, **244;** in sprays against pests of tobacco, **107;** other insecticides in dusts with, **438;** and sulphur, **438;** low-lime form of, **438;** rain reducing effectiveness of, **48.**
Calcium Cyanide, fumigation with, against insects in stored grain, **334.**
calicifera, Sarcophaga.
Calidea dregii, insecticides against, on cotton in Tanganyika, **164, 165;** sorghum as possible trap crop for, **154.**
calidella, Ephestia.
California, mites on almond in, **281, 282;** pests of *Citrus* in, **16, 121, 186, 224, 263, 393, 429, 433;** pests of other fruit trees in, **59, 179, 180, 222, 281, 309, 310, 336, 384, 429, 444, 494, 496;** strawberry pests in, **311, 355, 441, 451;** *Harrisina brillians* on vines in, **86;** pests of walnut in, **348, 429;** pests of beans in, **176, 188, 425;** beet pests in, **52, 424, 425;** pests of cucurbits in, **15, 17, 18, 237, 437;** tomato pests in, **50, 217, 345;** pests of other vegetables in, **18, 178, 282, 427, 451;** cotton pests in, **95, 383, 424, 427;** insects on lucerne in, **124, 226, 237, 383, 424, 491;** *Elasmopalpus lignosellus* on sorghum in, **425;** pests of conifers in, **234, 384;** grasshoppers in, **308;** insects and virus diseases of plants in, **15, 16, 17, 18, 52, 444, 445, 496, 497;** *Carpophilus hemipterus* disseminating *Sclerotinia fructicola* on peach in, **494;** natural enemies and biological control of insects in, **86, 179, 180, 186, 237, 263, 308, 383, 384, 393, 433, 437, 491;** use of *Typhlodromus* spp. against *Steneotarsonemus pallidus* in, **311;** occurrence and use of virus diseases of Lepidoptera in, **86, 125, 427, 428;** fungi infesting insects in, **87, 124, 491;** establishment of *Apion ulicis* against *Ulex europaeus* in, **347.**
California Damp-wood Termite (see *Zootermopsis nevadensis*).
California Privet (see *Ligustrum ovalifolium*).
California Red Scale (see *Aonidiella aurantii*).
californica, Chrysopa.
californicus, Euryophthalmus cinctus; Limonius.
Caliroa limacina, bionomics of, on fruit trees in Yugoslavia, **397.**
Calliceras (see *Ceraphron*).
Calliephialtes (see *Ephialtes*).
Calliphora vicina (*erythrocephala*), effect of temperature on permeability of cuticle of, **83.**
Calliptamus italicus, used in test of systemic insecticide, **285.**
Callistephus (Aster), virus disease of, transmitted from potatoes in Oregon by *Macrosteles fascifrons*, **492;** use of, for rearing *M. fascifrons*, **96.**
Callisto geminatella (see *Parornix*).
Callosobruchus, classification of species of, **415, 416.**
Callosobruchus chinensis (Cowpea Bruchid), used in tests of insecticides, **171, 322;** characters and synonymy of, **415, 416;** related species recorded as, in southern Africa, **416.**
Callosobruchus maculatus, bionomics of, in stored cowpeas in Egypt and Nigeria, **24, 25, 212, 213;** experiments with other leguminous seeds and, **25;** forms of females of, **213;** characters and synonymy of, **416.**
Callosobruchus rhodesianus, on cowpeas in southern Africa, **416;** status, characters and synonymy of, **416.**
Callosobruchus subinnotatus, on *Voandzeia subterranea* in Ghana, **416;** characters and status of, **416.**
Calomel (see Mercurous Chloride).
Calosoma sycophanta, predacious on *Lymantria monacha* in Yugoslavia, **397.**
Calosota vernalis, parasite of *Pissodes notatus* in Italy, **362.**
cambiicola, Dioryctria.
Cameroons, French, pests of cacao in, **254;** *Anaphe venata* on *Cola* in, **506;** rice pests in, **29, 30, 110, 111, 365;** beneficial insects in, **29, 30, 111, 365, 506.**
camerunus, Anisopteromalus (*Aplastomorpha*).
Camnula pellucida, insects destroying egg pods of, in U.S.A., **308.**
Campanula, Myzus ascalonicus on, in glasshouse in Denmark, **79.**
campestris, Lygus.
Camphor, repellent to *Attagenus megatoma*, **344.**
Camphor Tree (see *Cinnamomum camphora*).
Campoplex, parasitising *Ennomos quercinaria* in Germany, **78;** bionomics of, parasitising *Gnorimoschema operculella* in India, **474, 475.**
Campsomeris, parasites of *Dermolepida noxium* in Papua, **106.**
Campylomma, method of estimating populations of, on cotton in Nigeria, **368.**

Canada, *Psila rosae* on carrot in, **131**; pests of cereals in, **102, 389**; pests of conifers in, **12, 200, 246, 266, 466**; pests of cranberry in, **194**; *Ptinus villiger* in flour in, **64, 65**; insects imported into, in stored products, **132**; beneficial insects and biological control in, **12, 131, 200, 266**; *Bracon gelechiae* introduced into India from, **13**; *P. villiger* intercepted in Britain in produce from, **64**; book on arthropods of western, **406**; history of entomology in, **76**. (See also under the individual Provinces.)
canadensis, Dasyneura.
Canavalia ensiformis, Cryptophlebia williamsi on, in Mauritius, **421**.
cancellalis, Epipagis.
canda, Empoasca.
canella, Diatraea (see *Eodiatraea centrella*).
canus, Limonius.
Cape Gooseberry (see *Physalis peruviana*).
capitata, Ceratitis.
Capitophorus fragaefolii, distribution and relation to strawberry viruses of, **202**.
Capitophorus galeopsidis, on potato and *Galeopsis* in Norway, **308**.
Capnodis cariosa, measures against, on pistachio in Syria, **238**.
Capsicum, Aphids and virus diseases of, in U.S.A., **15, 493**; not injured by insecticides, **471**.
Captan (N-trichloromethylthio)-4-cyclohexene-1,2-dicarboximide), as fungicide in sprays and seed treatments, **22, 93, 107**; compatibility of insecticides with, **93, 107**.
Capua reticulana (see *Adoxophyes orana*).
Caragana spp., *Bruchophagus caraganae* on, in Canada, **189**.
caraganae, Bruchophagus (*Eurytoma*).
Carbon Bisulphide, sulphur dioxide not reducing inflammability of, as grain fumigant, **46**.
Carbon Dioxide, used for anaesthetising insects, **16, 485**.
cardui, Vanessa.
Carica papaya (see Papaya).
caridei, Coccophagus.
cariosa, Capnodis.
Carnation, *Taeniothrips atratus* on, in Britain, **456**; *Pseudonapomyza dianthicola* on, in France, **283**.
Carneocephala flaviceps, transmitting Pierce's virus of vines in Florida, **494**.
Carolina, North, varieties of cotton in, in relation to *Anthonomus grandis*, **338**; *Conotrachelus nenuphar* in, **181**; Lepidoptera on tobacco in, **54, 217, 227**; *Lasioderma serricorne* in stored tobacco in, **225**; new Tetranychid on *Wistaria* in, **261**; tests of *Bacillus thuringiensis* against *Protoparce sexta* in, **217**.
Carolina, South, *Anthonomus grandis* in, **450**; *Diaphania nitidalis* in, **60**; wireworms in, **63**.
Carpocapsa (see *Cydia*).
Carpocoris pudicus, bionomics and natural enemies of, on wheat in Russia, **286**.
Carpocoris pudicus fuscispinus, **286**.
Carpoglyphus lactis, bionomics and control of, in dried prunes in Yugoslavia, **287**.
carpophaga, Phytophaga.
Carpophilus dimidiatus, in grain-moving equipment in Venezuela, **452**.
Carpophilus freemani, sp. n., distribution of, in stored products, **66**.
Carpophilus hemipterus, disseminating *Sclerotinia fructicola* on peach in California, **494**; attacking field and stored dates in Libya, **297**.
Carpophilus lugubris, experiments with oak wilt fungus and, in West Virginia, **17**.
Carpophilus mutilatus, C. freemani compared with, **66**.
Carrot, *Psila rosae* on, in Canada, **131, 316, 317**; *P. rosae* on, in Germany, **203**; *Lygus campestris* on, in Holland, **196**; *Tiphia* spp. attracted to, in Hungary, **68**; *Ceresa bubalus* on, in Moldavia, **245**; *P. rosae* on, in Norway, **36**; insecticide residues in, **33, 232, 282**; insecticides causing tainting of, **282**.
Carrot Beetle (see *Ligyrus gibbosus*).
Carrot Rust Fly (see *Psila rosae*).
Carrot Weevil (see *Listronotus oregonensis*).
Carulaspis minima, lizards destroying Coccinellids introduced against, on *Juniperus bermudiana* in Bermuda, **416**.
Carulaspis visci, C. minima recorded as, in Bermuda, **416**.
caryana, Enarmonia (*Laspeyresia*).
Caryedon acaciae, C. gonagra recorded as, **114**.
Caryedon cassiae, C. gonagra recorded as, **114**; possibly identical with *C. fuscus*, **114**.
Caryedon fuscus, C. gonagra recorded as, **114**; *C. cassiae* possibly identical with, **114**.
Caryedon gonagra, distribution and bionomics of, **114, 304**; misidentified as other species in stored groundnuts, **114**; characters of sexes of, **114, 305**.
Caryedon longus, C. gonagra recorded as, in stored groundnuts in Nigeria, **114**.
Caryoborus fuscus and *gonagra* (see *Caryedon*).

caryophyllacearum, Myzus (see *M. certus*).
Cassava, *Amblypelta* on, in New Guinea and Solomon Is., **412, 413.**
cassiae, Caryedon (*Pachymerus*).
castanea, Aserica (*Autoserica*); *Diaprepsis*; *Pentilia.*
castaneum, Tribolium.
castaneus, Scaptocoris.
Castnia daedalus, on coconut in Dutch Guiana, **406.**
Castor, *Acrocercops conflua* on, in Egypt, **24;** as food-plant for *Aonidiella aurantii*, **393;** not injured by insecticides, **471.**
catenaria, Cingilia.
Cathopsyche reidi, on tea in India, **114.**
catocaloides, Achaea.
Catolaccus aeneoviridis, hyperparasite of Lepidoptera in U.S.A., **383, 487.**
Cattle, insecticides in fat or milk of, **99, 229, 230;** conversion of aldrin to dieldrin in, **99.**
caudatus, Typhlodromus.
Cauliflower, insects transmitting virus diseases of, in Britain, **143, 144;** *Hylemyia brassicae* on, in Czechoslovakia, **326;** *Plutella maculipennis* on, in Germany, **401;** preference of *Myzus persicae* for sprayed seedlings of, **300;** not injured by insecticides, **471.**
Caulophilus latinasus, in grain-moving equipment in Venezuela, **452.**
cautella, Ephestia.
cavus, Dibrachys.
Ceanothus cordulatus, Malacosoma fragile on, in California, **125.**
Cecidophyes ribis, bionomics and control of, on black currant in U.S.S.R., **70;** transmitting reversion virus, **70.**
Cedar Oil, as repellent against *Attagenus megatoma*, **344.**
Celery, insects and virus diseases of, in U.S.A. and Canada, **18, 388, 445, 492, 496, 497;** (harvested), injured by sulphuryl-fluoride fumigation, **88.**
Celite, as granular carrier for insecticides, **56, 94.**
cembrae, Ips.
Centranthera nepalensis, Lasioderma sericorne in stored seed of, in India, **473;** suggested use of *L. sericorne* against, **473.**
centrella, Eodiatraea.
Centrosema (as cover crop), reducing incidence of mosaic in *Musa textilis* in Philippines, **354.**
Cephalcia marginata, bionomics of, in Quebec, **85, 86;** parasites of, **86.**
cephalonica, Corcyra.
Cephalosporium acremonium, infesting *Hypera variabilis* in Poland, **458.**
Cephus cinctus, on wheat in Canada, **21, 389, 482, 484;** parasite of, on grasses and wheat in Montana, **122;** studies on resistance of varieties of wheat to, **389, 482, 484;** strains of, in relation to wheat varieties, **482, 484;** effects of field exposure of wheat stubs on, **21, 22.**
Ceraphron braconiphagus, hosts of, in French Cameroons, **365.**
Ceraphron clavatus violae, parasite of *Dasyneura affinis* in Germany, **245.**
Cerastium, Myzus certus on, in glasshouse in Denmark, **79.**
Ceratitis capitata, in Costa Rica, **121;** in Cyprus, **24;** in Florida, **349, 350, 448;** in France, **7, 77;** in Hawaii, **349;** in Israel, **275;** on *Citrus*, **7, 24, 275;** on deciduous fruit trees, **7, 24, 77;** other host-fruits of, **121;** bionomics of, **7;** sprays or bait-sprays against, **24, 275, 448;** angelica oils as baits for, **349, 350;** plastic trap for, **350.**
Ceratitis colae, on *Cola* in French West Africa, **407.**
Ceratostomella ulmi (causing Dutch Elm Disease), Scolytids transmitting, in Canada and U.S.A., **387, 483.**
Ceratovacuna (see *Oregma*).
cerealella, Sitotroga.
Cereals, *Toxoptera graminum* on, in South America, **76;** *Syringopais temperatella* on, in Israel, **417;** *Pseudaletia unipuncta* on, in Tennessee, **102;** *Eurygaster integriceps* on, in U.S.S.R. and Turkey, **8, 9, 10, 364;** suggested use of *Lasioderma serricorne* against plants parasitic on roots of, **473;** BHC seed treatment possibly stimulating growth of, **21.** (See Maize, Wheat, etc.)
Cereals (Stored), Coleoptera in, **5, 42, 46, 47, 133, 161, 162, 208, 262, 285, 298, 333, 334, 362, 392, 407, 442, 451, 452, 471;** other pests in, **5, 47, 53, 270, 334, 471;** fumigation of, **5, 45, 46, 298, 324, 334;** other measures and experiments against pests in, **47, 53, 133, 134, 285, 362, 471.**
Ceresa bubalus, bionomics and control of, in Moldavia, **245.**
Cerococcus kalmiae, bionomics and control of, on cranberry in Massachusetts, **103.**
cerophaga, Angitia.
Ceroplastes rusci, sprays against, on fig in Yugoslavia, **5.**
Cerotoma trifurcata, insecticides against, on lima beans in Maryland, **227.**
certus, Myzus.
Ceutorhynchus assimilis (on crucifers), in Finland, **240;** in Germany, **401;** parasites of, in Idaho, **382;** favouring

infestation of rape by *Dasyneura brassicae*, **401.**
Ceutorhynchus napi, bionomics and control of, on rape in Germany, **462**; experiments relating to gall-formation by, in rape and cabbage, **462.**
Ceutorhynchus pleurostigma, bionomics of, on crucifers in Germany, **292, 293**; parasites of, **293.**
Ceutorhynchus quadridens (on crucifers), in Finland, **240**; experiments relating to gall-formation by, **462.**
Ceutorhynchus rapae, on crucifers in Finland, **240.**
Ceylon, pests and virus disease of cacao in, **30, 112, 113**; *Dysmicoccus brevipes* on pineapple in, **112**; pests of tea in, **113, 198**; *Cryptotermes dudleyi* in, **503**; natural enemies of mealybugs in, **112**; virus disease of *Natada nararia* in, **198**; natural enemies of pests introduced into Pacific Islands from, **103, 105, 158.**
ceylonensis, *Helopeltis*.
Chaetocnema, on beet in Rumania, **80.**
Chaetocnema breviuscula (on beet), in Bulgaria, **328**; in U.S.S.R., **80.**
Chaetocnema concinna (on beet), in Bulgaria, **328**; in U.S.S.R., **80.**
Chaetocnema confinis, insecticides against, on sweet potato in Louisiana, **49.**
Chaetophorus (see *Hylesinus*).
Chaetospila elegans, parasitising stored-product beetles in Holland, **284.**
chalcites, *Plusia*.
Chalioides spp., on tea in India, **114.**
Charcoal, in parathion sprays **84.**
Charcoal, Activated, seed treatments with systemic insecticides on, **341, 424, 425, 435**; effects of, in DDT dusts and sprays, **20.**
Charitopimpla sericata, parasite of *Kotochalia junodi* in South Africa, **250**; bionomics and diseases of, **250.**
Charlock (see *Sinapis arvensis*).
Charops, parasite of Pyralid in French Cameroons, **365**; parasite of, **365.**
charus, *Atanycolus*.
Cheesecloth, insecticide-impregnated, for screening greenhouses against *Frankliniella tritici*, **94.**
Cheilomenes sexmaculata (see *Menochilus*).
Cheiloneurus pyrillae, parasite of *Pyrilla perpusilla* in India, **422.**
Cheiropachus colon, parasite of *Scolytus rugulosus* in Germany, **202.**
Chelonus, bionomics of, parasitising *Gnorimoschema operculella* in India, **474**; parasitising Lepidoptera in Mauritius, **421.**
Chelonus curvimaculatus, **474.**
Chelonus heliopae, failure to establish, against *Platyedra gossypiella* in Texas and Mexico, **352.**
Chelonus narayani, failure to establish, against *Platyedra gossypiella* in Texas and Mexico, **352.**
Chelonus texanus, failure to establish, against *Loxostege frustalis* in South Africa, **251**; automatic collection of laboratory-reared adults of, **251.**
Chenopodium spp., used in experiments with *Liriomyza langei* and virus diseases in California, **498.**
Chermes, Cecidomyiid predacious on, on *Abies alba* in Switzerland, **470.**
Chermes nordmannianae, ecological forms and predators of, on *Abies alba* in central Europe, **246, 247.**
Chermes nordmannianae form *schneideri*, **246.**
Chermes nüsslini (see *Chermes nordmannianae*).
Chermes piceae (on *Abies* spp.), in Canada, **12, 200, 246, 266**; in central Europe, **200, 201, 246, 470**; bionomics of, **200, 201, 246**; ecological forms of, **246**; predacious enemies and biological control of, **12, 200, 201, 246, 247, 266, 470.**
Chermes piceae form *aggressiva*, **246.**
Cherry, *Pammene rhediella* on, in Switzerland, **469**; pests of, in U.S.A., **180, 217, 309, 397, 427, 428, 431, 432, 444**; *Rhynchites auratus* on, in Yugoslavia, **4**; *Colladonus geminatus* transmitting virus disease of, **444**; as foodplant for *Hyphantria cunea*, **3.**
Chick-pea (see *Cicer arietinum*).
Chickweed (see *Stellaria media*).
Chile, *Aphidius platensis* parasitising peach Aphids in, **76**; lists of insect pests and their natural enemies in, **357.**
Chilo phaeosema, sp. n., on rice in Southern Rhodesia, **172**; in Nyasaland and Tanganyika, **172**; misidentified as *Parerupa* (*Diatraea*) *africana* (*q.v.*), **172.**
Chilo simplex (see *C. suppressalis*).
Chilo suppressalis (Rice Stem Borer), in Egypt, **29**; in Japan, **276**; **321**; **380, 422**; in Malaya, **73, 153, 276**; in Philippines, **354**; light-trap collections of, **29, 276, 321**; bionomics of, **321**; factors inducing diapause in, **422**; rate of synthesis of acetylcholine in eggs of, **340**; new Anthocorid predacious on, **276**; *Paratheresia claripalpis* reared on, **73**; time of transplanting rice in relation to, **321**; insecticides against, **153, 321, 354, 380.**

Chilo zonellus, on cereals and grasses in Uganda, **303, 304**; life-cycle of, **304**.
Chilocorus bipustulatus (predacious on Coccids) in France, **395**; in Israel, **275**; risk of insecticides to, **275**.
Chilocorus cacti (predacious on Coccids), introduced into Morocco from Texas, **297**; in Trinidad, **269**.
chilonis, Angitia (*Horogenes*).
Chilotraea infuscatella, on sugar-cane in Philippines, **354**.
Chilotraea polychrysa (on rice in Malaya), bionomics of, **276**; natural enemies of, **74**; attempted introduction of *Paratheresia claripalpis* against, **73, 74**; insecticides against, **153, 276**.
chinensis (Thnb.), *Bruchidius* (*Bruchus*).
chinensis (L.), *Callosobruchus* (*Curculio*).
Chipman R-6199, **424**.
chirindanum, Apion.
Chirothrips manicatus, on grasses in New Zealand, **257**; characters of, **257**.
Chirothrips pallidicornis, bionomics and control of, on grasses and clover in New Zealand, **257, 258**; characters of, **257**.
Chives, *Myzus ascalonicus* on, in glasshouse in Denmark, **79**.
Chlorbenside (p-chlorobenzyl p-chlorophenyl sulphide), in sprays against mites, **32, 34, 37, 324, 325, 429, 463**; comparisons of toxicity to Tetranychid eggs and larvae of related compounds and, **273, 381**; ineffective against insects, **322**; natural enemies of orchard pests little harmed by, **191**; colorimetric methods of analysis of residues of, **134**.
Chlordane, against ants, **32, 33**; use of, to kill ants in fruit-fly traps, **350**; against Coccids, **499**; against other Hemiptera, **228, 500**; against Curculionids, **50, 84, 181, 234, 437, 441**; against Elaterids, **38, 63, 187, 282**; development of resistance to, in *Conoderus falli*, **63**; against other Coleoptera, **50, 60, 91, 99, 223, 279, 301**; against grasshoppers, **228**; against *Hylemia* spp., **271, 430, 431**; against *Merodon equestris*, **464, 465**; against Lepidoptera, **221, 234, 388**; against termites, **225, 447**; against *Vasates lycopersici*, **50**; laboratory tests of toxicity of, to insects, **174, 217, 236, 301, 470**; in dusts, **38, 50, 60, 174, 221, 271, 437, 499**; in granules, **50, 99, 441**; in sprays, **32, 33, 50, 84, 91, 181, 217, 228, 234, 271, 301, 431, 470, 499**; treatments of bulbs with, **431, 464, 465**; soil treatment with, **38, 50, 63, 187, 223, 225, 271, 279, 282, 388, 430, 431, 432, 433, 499, 500**; persistence of, in soil, **156, 187, 223, 499**; effect of soil treatment with, on plants and Tetranychids on them, **432, 433**; effect of, on soil micro-organisms, **156**; residues of, on peaches, **234**; and DDT, **221, 228**; and sulphur, **221, 437**; and toxaphene, **221**.
Chlorfenson (see p-Chlorophenyl p-Chlorobenzenesulphonate).
Chloridea obsoleta, auct. (see *Heliothis armigera*).
Chlorides, factors affecting fumigant toxicity of alkyl, **207**.
Chloris gayana, Oligonychus pratensis on, in Texas, **310**.
Chlorobenzilate (ethyl 4,4′-dichlorobenzilate), in sprays against mites, **138, 139, 178, 261, 274, 281, 429, 442**; in dust against *Tetranychus telarius*, **176**; ineffective against insects, **322**; peach scorched by, **139**; affecting flavour of sauce from sprayed apples, **281**; determination of spray deposits of, **509**.
p-Chlorobenzyl p-Chlorophenyl Sulphide (see Chlorbenside).
p-Chlorobenzyl p-Chlorothiolobenzoate, toxicity of, to Tetranychid eggs and larvae, **272**.
Chlorobenzyl Heterocyclic Sulphides, tests of, against Tetranychid eggs and larvae, **381, 382**.
Chlorocide, **34, 191, 463**.
Chlorodryinus pallidus, parasite of *Pyrilla perpusilla* in India, **422**.
2-Chloroethyl-2-(p-tert.-Butylphenoxy)-1-methylethyl Sulphite (see Aramite).
Chlorophenoxycyclopropane Carboxylic Acid, insecticidal activity of esters of, **38**.
p-Chlorophenyl Benzenesulphonate, in sprays against mites, **32, 34, 37, 176**.
p-Chlorophenyl p-Chlorobenzenesulphonate, in sprays against mites, **32, 34, 58, 176, 178, 214, 224, 225, 261, 281, 325, 442**; in dusts against *Tetranychus* spp., **176, 177**; tests of toxicity of, to *Toumeyella numismatica*, **486**; residues and effects of sprays of, on fruits, **19, 20, 95, 281**; and Aramite, **225**.
p-Chlorophenyl Phenyl Sulphone, in sprays against mites, **281**; effect of, on flavour of fruits, **281**.
p-Chlorophenyl Thiolobenzoate, toxicity of, to Tetranychid eggs and larvae, **272**.
1 - p - Chlorophenyl - 2, 2, 2 - trichloroethanol, in spray against *Bryobia*, **140**.
Chloropropylate, in sprays against mites, **138, 139, 140**.
Chlorops oryzae, bionomics of, on rice in Japan, **475**; methods for measuring resistance of rice varieties to, **475**.

Chlorparacide (see Chlorbenside).
Chlorthion (O, O-dimethyl O-3-chloro-4-nitrophenyl phosphorothioate), against *Brevicoryne brassicae*, **430**; against other Hemiptera, **152, 337**; against Curculionids, **48, 52, 219**; against Lepidoptera, **49, 95**; against *Tetranychus* spp., **58**; against Thysanoptera, **349, 366, 445**; laboratory tests of toxicity of, to insects, **49, 151, 152, 174, 236**; effect of, on *Tyroglyphus farinae* in flour, **53**; in dusts, **58, 95, 174**; in sprays, **48, 49, 52, 58, 151, 152, 219, 337, 349, 366, 430, 445**; effect of weather on toxicity of, **48**; and DDT, **151, 152**; other agents in sprays of, **337**.
Cholesterol, in diets for insects, **118, 186**.
Choline, in diet for *Platyedra gossypiella*, **186**.
Cholinesterases, action of phosphorus compounds on, **46, 51, 108, 179, 229, 254, 255**; assay of phosphorus compounds by inhibition of, **108, 183, 229, 232**; occurrence and nature of, in insect eggs, **51, 254**. (See also Acetylcholine.)
Chorinaeus longicornis, parasite of *Choristoneura murinana* in France, **466**.
Choristoneura fumiferana, in Canada, **188, 314, 331, 332, 347, 466**; in U.S.A., **347, 488**; on *Abies*, **314, 332, 347, 466, 488**; on *Pseudotsuga menziesii*, **347, 488, 489**; on spruce, **188, 347, 466, 488**; outbreaks of, **314**; techniques for study of fecundity and rates of development of, **331–332, 347**; favouring infestation by *Dendroctonus pseudotsugae*, **489**; proposed introduction of parasites of *C. murinana* against, **466**; aerial spraying against, **488**.
Choristoneura murinana (on *Abies alba*), insect enemies and diseases of, in Czechoslovakia and France, **398, 466**; population dynamics of, in Germany, **140**.
Chorizagrotis auxiliaris, virus diseases of, in U.S.A., **386**; oviposition response of, to surface texture, **385**.
Chortoicetes terminifera, aerial spraying against swarms of, in New South Wales, **411, 412**.
Chortophila (see *Hylemyia*).
Chromaphis juglandicola, schradan sprays against, on walnut in California, **348**.
Chrotogonus trachypterus, tests of malathion against, in India, **473**.
chrysanthemi, Diarthronomyia.
Chrysanthemum, *Diarthronomyia chrysanthemi* on, in New Zealand, **373**.
chrysocephala, Psylliodes.
chrysomelina, Epilachna.
chrysomphali, Aphytis.
Chrysomphalus ficus (*aonidum*, auct.), sprays against, on *Citrus* in Israel and Florida, **274, 386**; as food for larvae of *Chrysopa lateralis*, **312**.
Chrysopa, predacious on *Parornix geminatella* in U.S.A., **487**.
Chrysopa californica, predacious on mites in California, **186**; factors affecting oviposition by, on lemon, **186**.
Chrysopa flavifrons, bionomics of, predacious on *Chermes piceae* in Austria, **201**.
Chrysopa lateralis, effects of larval nutrition on, **312**.
Chrysopa plorabunda, little affected by DDT in peach orchards in Ontario, **88**.
Chrysopa rufilabris, DDT reducing populations of, in peach orchards in Ontario, **88**; destroying *Oligonychus pratensis* in Texas, **311**.
Chrysopa ventralis, bionomics of, predacious on *Chermes* spp. in central Europe, **201, 246, 247**.
Chrysopa vulgaris, predacious on *Parlatoria blanchardii* in Morocco, **296**.
Chrysophyllum cainito, Ceratitis capitata on, in Costa Rica, **121**.
chrysorrhoa, Scirpophaga.
chrysorrhoea, Euproctis.
cicatricosa, Glypta.
Cicer arietinum, Plusia orichalcea on, in India, **13**; effect of rearing *Callosobruchus maculatus* on seeds of, **25**.
Cicindela spp., not important as predators on *Nomia melanderi* in Washington, **349**; sprays against, **349**.
Cigarette Beetle (see *Lasioderma serricorne*).
cilicrura, Hylemyia.
Cimex lectularius, unfavourable host for *Trichogramma* spp., **399**.
cincticeps, Nephotettix apicalis.
cinctus, Cephus; *Euryophthalmus*.
Cingilia catenaria, on cranberry in Canada, **194**.
cingulata, Rhagoletis.
cinnabarinus, Tetranychus.
Cinnamomum camphora, Oligonychus biharensis on, in Mauritius, **167**.
cinnamopterum, Tetropium.
circularis, Diopsis.
Circulifer tenellus (in U.S.A.), laboratory tests of insecticides against, on beet, **174, 424, 425**; vector of curly-top, **174**; wild food-plants of, **122**.
circumflexa, Autographa (*Syngrapha*).
circumflexus, Myzus.
Cirphis, Mermis indica infesting, on maize in India, **474**.

Cirrospilus spp., parasites of *Gracillaria syringella* in U.S.S.R., **243.**
citima, Schizonycha.
citri, Panonychus (*Metatetranychus*); *Planococcus* (*Pseudococcus*); *Prays.*
citricidus, Toxoptera.
citricola, Coccidophilus.
citrifolii, Dialeurodes.
citrinus, Aspidiotiphagus.
Citrus, Lepidosaphes beckii on, in South Africa, **149, 299;** *Aphis gossypii* on, in Algeria, **206;** pests of, in Australia, **114, 374;** *Ceratitis capitata* on, in Costa Rica, **121;** *C. capitata* on, in Cyprus, **24;** pests of, in Egypt, **28, 506;** *Orthezia* on, in Grenadines, **136;** pests of, in Israel, **274, 275;** Tetranychids on, in Mauritius, **167;** pests of, in Morocco, **232;** *Aleurocanthus woglumi* on, in Pakistan, **72;** *Aleurothrixus floccosus* on, in Peru, **454;** pests of, in Philippines, **106, 354;** pests of, in U.S.A., **16, 121, 186, 224, 225, 233, 263, 386, 393, 429, 433;** Aphids and tristeza disease of, **16, 206, 506;** factors affecting oviposition by *Chrysopa californica* on, **186;** effects of oil sprays on juice of fruits of, **95, 182;** penetration, spread and metabolism of systemic insecticides in, **46, 182, 183, 228, 229.**
Citrus Flat Mite (see *Brevipalpus lewisi*).
Citrus Red Mite (see *Panonychus citri*).
Clania spp., on tea in India, **114.**
claripalpis, Paratheresia.
claripennis, Exenterus.
Clastoptera saint-cyri (*vittata*), on cranberry in Canada, **194.**
clavatus, Ceraphron (*Calliceras*).
clavipes, Ptinus.
Cleis picta, predacious on *Matsucoccus resinosae* in New York, **259.**
Cleonus punctiventris (on beet), in Bulgaria, **328;** in U.S.S.R. and Rumania, **80.**
clerkella, Lyonetia.
Clerodendron inerme, Orthezia insignis on, in Egypt, **27.**
clitellarius, Colladonus.
Clivina, feeding on wireworms in Nova Scotia, **11.**
Closterocerus trifasciatus, parasite of *Gracillaria syringella* in U.S.S.R., **243.**
Clover, *Myzocallis* spp. on, in Turkey and Persia, **230;** pests of, in U.S.A., **177, 214, 260;** increase of, in pastures injured by *Aphodius* in Tasmania, **239;** resistant to virus of *Desmodium uncinatum,* **31.** (See *Trifolium* spp.)
Clover Mite (see *Bryobia praetiosa*).
Clover Root Borer (see *Hylastes obscurus*).
Cnaphalocrocis medinalis, sprays against, on rice in Philippines and Malaya, **34, 35, 277.**
Cnemodon dreyfusiae, predacious on *Chermes* spp. in central Europe, **201, 247.**
Cnemodon latitarsis, predacious on *Chermes* spp. in central Europe, **247.**
coarctata, Hylemyia (*Leptohylemyia*).
Cobalt, Radioactive, sterilisation of *Pissodes strobi* by radiation from, **335;** use of, for tagging adults of *Rhyacionia buoliana,* **485.**
Coccidencyrtus, parasite of *Agrilus anxius* in New Brunswick, **270.**
Coccidophilus citricola, predacious on *Pseudaulacaspis pentagona* in Trinidad, **269.**
Coccinella conglomerata, predacious on *Chermes piceae* in Austria, **201.**
Coccinella septempunctata, predacious on Aphids in Britain, **306;** *Lasius niger* protecting *Aphis fabae* from, **306;** feeding by larvae of, on eggs of own species, **306.**
Coccinella transversoguttata, predacious on *Matsucoccus resinosae* in New York, **259.**
Coccinia indica. Margaronia indica on, in India, **137.**
Coccophagus, of Japan, **404.**
Coccophagus caridei, parasite of *Pulvinaria mesembryanthemi* in Argentina, **116.**
Coccophagus scutellaris, parasite of *Pulvinaria mesembryanthemi* in Argentina, **116.**
Coccotrypes dactyliperda, on date palm in Libya, **297.**
Coccus hesperidum, tests of sprays against, on greenhouse plants in U.S.S.R., **285;** map of distribution of, **509.**
Coccygomimus (see *Pimpla*).
Cockroaches (see *Blatta, Blattella* and *Periplaneta*).
Cocksfoot (see *Dactylis glomerata*).
Coconut, pests of, in Dutch Guiana, **406;** pests of, in India, **36;** book on pests of, in Indonesia, **380;** *Pseudotheraptus wayi* on, in Mafia I., **415;** Tetranychids on, in Mauritius, **167, 168;** pests of, in Pacific Is., **105, 157, 300, 301, 412, 413;** pests of, in Zanzibar, **413, 414, 415.**
cocophaga, Amblypelta.
Codling Moth (see *Cydia pomonella*).
Coelichneumon (see *Ichneumon*).
Coeloides brunneri, parasite of *Dendroctonus pseudotsugae* in Oregon, **489.**
Coeloides dendroctoni, parasite of *Ips* spp. in Alberta, **269.**

Coelophisthia, parasite of *Bruchophagus caraganae* in Canada, **189.**
coenia, Junonia.
Coenosia tigrina, bionomics of, predacious on insects in Canada, **130;** characters distinguishing *Hylemyia antiqua* from, **130.**
Coffea (see Coffee).
Coffea canephora, Leucoptera coffeella on, in Trinidad, **409.**
coffeae, Diarthrothrips; Neorhizoecus; Schizobremia.
Coffee, insects on, in East Africa, **166, 366, 367, 409;** *Leucoptera coffeella* on, in Brazil, **453;** *Ceratitis capitata* on, in Costa Rica, **121;** new weevil on, in Ubangi, **366;** Coccids on, in Venezuela, **498, 499;** identity of species of *Leucoptera* on, in Africa and America, **409.**
coffeella, Leucoptera (*Perileucoptera*).
cognatus, Poeciloscytus.
coiti, Oligonychus (see *O. punicae*).
Cola, pests of, in French West Africa and Cameroons, **406, 407, 506.**
colae, Ceratitis.
Coleocentrus, parasite of Pyralid in French Cameroons, **365.**
Coleophora laricella, on larch in Germany, **66.**
Colladonus clitellarius, on peach in U.S.A., **494.**
Colladonus geminatus, relation of, to virus diseases of stone fruits in U.S.A., **444, 496, 497.**
Colladonus montanus, relation of, to virus diseases of plants in U.S.A., **17, 496, 497.**
collaris, Diopsis; Helopeltis.
Collops spp., study of predacious habits and life-cycles of, in Texas, **335, 336.**
Colombia, new species of *Empoasca* on beans in, **310;** virus diseases of *Laphygma frugiperda* in, **386.**
colon, Cheiropachus.
colonus, Xylotrechus.
Colopterus semitectus, experiments with oak wilt fungus and, in West Virginia, **17.**
Colorado, *Diabrotica virgifera* on maize in, **175;** *Dissosteira longipennis* in, **309;** food-plants of *Epitrix tuberis* in, **340;** forest pests in, **263, 385;** insects in stored grain in, **334.**
Coloradoa (see *Rhopalosiphum*).
comariana, Acleris.
comes, Erythroneura.
Commonwealth Institute of Biological Control, directorship of, **241.**
Commonwealth Institute of Entomology, directorship of, **197.**
compactus, Halictophagus (*Pyrilloxenos*).
Comperiella bifasciata, effect of food-plant of *Aonidiella aurantii* on development of, in California, **393.**
Compound 1189, **84.**
Compsilura concinnata, introduced parasite of *Stilpnotia salicis* in Canada, **127;** other hosts and factors influencing, **127.**
Compsus serrans, sp. n., on sugar-cane in Venezuela, **452.**
comptana, Ancylis.
comstockii, Ephialtes (*Calliephialtes*).
concinna, Chaetocnema.
concinnata, Compsilura.
Conference on Sugar and Beet in Prague, proceedings of, **79.**
confinis, Chaetocnema.
conflua, Acrocercops.
confluentus, Glischrochilus.
confusum, Tribolium.
confusus, Ips; Melanoplus.
conglomerata, Coccinella.
Congo, Belgian, coffee pests in, **151;** *Hemitarsonemus latus* on cotton in, **45;** termites in, **151, 503.**
Connecticut, Aphids and virus disease of potato in, **492;** insects on pines in, **259, 265;** virus disease of *Lymantria dispar* in, **431.**
Conoderus amplicollis, not developing resistance to insecticides in South Carolina, **63.**
Conoderus falli (*vagus*), development of resistance to insecticides in, in South Carolina, **63;** synonymy of, **63.**
Conomorium eremita, parasite of *Oria musculosa* in France, **205.**
Conophthorus lambertianae, overwintering habitat of, on *Pinus lambertiana* in California, **234.**
Conophthorus resinosae, reducing seed production of *Pinus resinosa* in Ontario, **129, 315, 482;** bionomics of, **129, 482;** natural enemies of, **129, 130.**
Conotrachelus nenuphar, in Quebec, **84;** in U.S.A., **180, 181, 219, 234, 343, 353;** on apple, **84, 180;** on stone fruits, **180, 219, 234, 343, 353;** bionomics and strains of, **181, 353;** parasite of, **219;** sprays against, **84, 180, 219, 234;** soil insecticides against, **343;** laboratory rearing of, **181.**
consorta, Amatissa.
conspersus, Dichroplus.
constricta, Agallia.
Contarinia nasturtii, dates of emergence of, on crucifers in Holland, **455.**
Contarinia sorghicola (on sorghum), Texas the type locality of, **413;**

behaviour and parasites of Cecidomyiids morphologically identical with, from Ghana and Mysore, **413.**

Contarinia tritici, on wheat in Germany, **78, 79**; natural enemies and disease of, **79.**

convergens, *Hippodamia.*

Convolvulus arvensis, *Tetranychus telarius* on, in Jordan, **507.**

Copidosoma tortricis, parasite of *Acleris comariana* in Germany, **195.**

Copper Oxychloride, DDT in sprays of, **32.**

Copper Sulphate, Basic, spray mixtures containing, **233.**

Coptotermes, methods of testing timber preservatives and soil treatments against species of, in Australia, **479.**

Coptotermes acinaciformis, **479**; bionomics and distribution of subspecies of, in Western Australia, **357, 358.**

Coptotermes acinaciformis raffrayi, status of, **357.**

Coptotermes amanii, protection of buildings from, in East Africa, **503.**

Coptotermes brunneus, sp. n., bionomics and distribution of, in Western Australia, **357, 358.**

Coptotermes frenchi, **479**; bionomics and distribution of, in Western Australia, **357, 358**; characters of, **358.**

Coptotermes lacteus, **479.**

Coptotermes michaelseni, bionomics and distribution of, in Western Australia, **357, 358**; characters of, **358.**

Coptotermes raffrayi (see *C. acinaciformis raffrayi*).

Corcyra cephalonica, use of, for rearing *Bracon gelechiae* in India, **13**; effect of storage conditions on infestation of sorghum by, **471.**

Cordyceps, infesting *Paratheresia claripalpis* in Peru, **501.**

Cordyceps aphodii, infesting *Aphodius howitti* in Australia, **377.**

Corn Borer, European (see *Pyrausta nubilalis*).

Corn Borer, Southwestern (see *Zeadiatraea grandiosella*).

Corn Earworm, American (see *Heliothis zea*).

Corn Leaf Aphis (see *Aphis maidis*).

Corn Rootworm (see *Diabrotica longicornis*).

Corn Rootworm, Western (see *Diabrotica virgifera*).

corni, *Eulecanium.*

cornutus, *Gnathocerus.*

Corrosive Sublimate (see Mercuric Chloride).

Cosmolyce boetica, on *Cajanus cajan* in Mauritius, **421**; parasite of, **421.**

Cosmophila flava, bionomics and control of, on cotton in India, **473.**

Cosmopolites sordidus, on banana in Uganda, **367, 409, 410**; measures against, **367**; characters differentiating *Temnoschoita* and, **367, 410.**

Costa Rica, *Ceratatis capitata* in, **121.**

costalis, *Amblypelta.*

Costelytra zealandica, in pastures in New Zealand, **359, 360**; injuring tussock-grass, **360**; oviposition preferences by, **359**; natural enemies and disease of, **359.**

Cothonaspis rapae (see *Trybliographa*).

Cotinis nitida (in U.S.A.), in clover pastures, **99**; in tobacco plant beds, **59**; damage to grapes by adults of, **55**; insecticides against, **55, 59, 99.**

Cotoneaster microphylla, *Eulecanium corni* on, in England, **25.**

Cotton, *Aphis gossypii* on, in Brazil, **499**; pests of, in Belgian Congo, **45, 151**; *Prodenia litura* on, in Egypt, **27, 28**; pests of, in India, **137, 473**; *Earias insulana* on, in Israel, **419**; pests of, in Jordan, **507**; *Platyedra gossypiella* on, in Mexico, **352**; *Campylomma* on, in Nigeria, **368**; pests of, in Peru, **454**; pests of, in Sudan, **108, 109, 165, 368**; pests of, in Swaziland, **407**; pests of, in Tanganyika, **44, 116, 164**; pests of, in Uganda, **43–45, 198, 502**; pests of, in U.S.A., **48, 49, 51, 57, 58, 60, 61, 62, 95, 100, 121, 175, 216, 221, 261, 337, 344, 346, 352, 383, 424, 427, 435, 436, 437, 438 440, 443, 444, 445, 446, 449, 450, 490**; book on pests of, in tropical Africa, **501, 502**; varieties and species of, in relation to pests, **61, 337, 338, 490**; value for *P. gossypiella* of extrafloral nectar of, **61**; technique for determining infestation of samples of, by *P. gossypiella*, **449**; studies of crop loss due to pests on, **43-45, 57, 435**; physiological effects of *Bemisia tabaci* and parathion on, **109**; methods and results of systemic treatment of, with insecticides, **46, 108, 183, 222, 228, 229, 348, 423, 424, 425, 449, 499**; effects of soil insecticides on composition, growth and nutritive value to *Tetranychus* spp. of, **432, 433**; cholinesterase-inhibitor in bolls of, **108.**

Cotton Aphis (see *Aphis gossypii*).

Cotton Boll Weevil (see *Anthonomus grandis.*

Cotton Bollworm, American (see *Heliothis zea*).

Cotton Bollworm, Pink (see *Platyedra gossypiella*).
Cotton Bollworm, Red (see *Diparopsis castanea*).
Cotton Bollworm, Spiny (see *Earias insulana*).
Cotton Bollworm, Sudan (see *Diparopsis watersi*).
Cotton Leafworm, Brown (see *Acontia dacia*).
Cottonseed, technique for determining infestation of, by *Platyedra gossypiella*, **449**; as laboratory food for *Dysdercus fasciatus*, **246**.
Cottonseed Meal, *Trogoderma* in, **149**.
Cowpea Bruchid (see *Callosobruchus chinensis*).
Cowpeas, pests of, in South Africa, **109, 110, 416**; classification of Bruchids infesting, **415, 416**.
Cowpeas (Stored), Bruchids in, **24, 25, 212, 334**; weight loss caused by *Acanthoscelides obtectus* in, **334**; *Lasioderma serricorne* in, **212**.
coxalis, *Elachertus*.
craccivora, *Aphis*.
Crambus, assisting regeneration of tussock-grass in New Zealand, **360**.
cramerella, *Acrocercops*.
cramerii, *Clania*.
Cranberry, pests of, in Canada, **194**; Coccids on, in U.S.A., **103**.
crataegi, *Aporia*.
Crataegus, *Lymantria dispar* on, in U.S.S.R., **68**.
Creatonotus punctivitta, on rice in French Cameroons, **365**.
Cremastus platynotae, parasite of *Platynota stultana* in California, **383**.
Crematogaster striatula, associated with *Pseudococcus njalensis* in Ghana, **417**.
Cremifania nigrocellulata (predacious on *Chermes* spp.), in central Europe, **201, 247**; established in Canada, **12, 267**; parasite of, **201**; characters of, **12**.
Cremnops frustalis, sp. n., parasite of *Loxostege frustalis* in South Africa, **110**.
Creontiades pallidus, sprays against, on cotton in Sudan, **109**.
Creosote, Coal Tar, value of, as wood preservative against termites, **199**.
crini, *Brithys*.
Crinum spp., *Brithys crini* on, in India, **422**.
Crioceris asparagi, toxicity of paraoxon to, **231**.
cristata, *Bryobia*.
Cristatithorax quadricolor, parasite of *Dryinus pyrillae* in India, **422**; bionomics of, **422**.
cristobalensis, *Amblypelta*.
Crotalaria, virus disease infecting, in Queensland, **31**.
Crotalaria juncea, pests of, in India, **161, 475**.
Cryolite, dusting with, against Lepidoptera, **14, 55**; favouring infestation of melon by Aphids, **15**.
Cryptognatha spp., predacious on *Pseudaulacaspis pentagona* in Trinidad, **269**; failure to establish in Bermuda, **269**.
Cryptolestes (in stored products), in Oregon, **173**; review of distribution and ecology of species of, **42**.
Cryptolestes ferrugineus, **42**; use of water-trap to detect, in stored grain in Manitoba, **392**.
Cryptolestes minutus, **42**.
Cryptolestes pusilloides, **42**.
Cryptolestes spartii, **42**.
Cryptolestes turcicus, **42, 243**.
Cryptolestes ugandae, **42**.
Cryptomyzus galeopsidis (see *Capitophorus*).
Cryptophlebia illepida, bionomics and parasites of, on *Macadamia* and *Acacia* in Hawaii, **104**.
Cryptophlebia williamsi, parasites of, on *Cajanus cajan* in Mauritius, **421**.
Cryptotermes brevis, distribution of, **503**.
Cryptotermes domesticus, distribution of, **503**.
Cryptotermes dudleyi, in building timber in East Africa, **503**; distribution of, elsewhere, **503**.
Cryptotermes havilandi, in building timber in West Africa, **503**; *C. dudleyi* recorded as, in East Africa, **503**.
Ctenicera pruinina noxia, treatment of wheat seed with insecticides against, in Washington, **450**.
Ctenomeristis ebriola, on mango in India, **163**.
Ctenophorocera (see *Pales*).
Cuba, new species of *Empoasca* in, **310**; *Neodiprion insularis* in, **264**.
cubensis, *Trichopria*.
Cucumber, *Dacus cucurbitae* on, in Hawaii, **446, 508**; pests of, in U.S.A., **14, 15, 16, 17, 60**; insects and virus diseases of, **16, 17**; effects of insecticides on, **15, 20**.
Cucumber Beetle, Striped (see *Acalymma vittata*).
cucumeris, *Epitrix*; *Typhlodromus*.
cucurbitacearum, *Tetranychus* (*Eotetranychus*) (see *T. cinnabarinus*).
cucurbitae, *Dacus*; *Melittia*; *Tetranychus*.
cunea, *Hyphantria*.

cupreata, Psylliodes.
Curculio chinensis (see *Callosobruchus*).
curculionis, Bathyplectis; Triaspis.
Curcuma longa (Turmeric), *Lema* spp. on, in India, **345.**
Currant, *Psila rosea* sheltering on, in Norway, **36.**
Currant, Black, *Dasyneura tetensi* on, in Britain, **248;** mites on, in U.S.S.R., **70;** hot water treatment of slips of, against *Cecidophyes ribis*, **70.**
curva, Diopsis.
curvimaculatus, Chelonus.
Cuscuta (Dodder), strawberry virus transmitted through, **146.**
custator, Thyanta.
Cut-leaved Nightshade (see *Solanum triflorum*).
Cutworm, Pale Western (see *Agrotis orthogonia*).
Cutworm, Western Bean (see *Loxagrotis albicosta*).
Cutworms, on potato in Britain, **148;** measures against, **205, 206, 244, 364, 388, 440.**
cyaniceps, Eupelmus.
p-Cyanobenzyl Phenyl Sulphide, and derivatives, tests of, against Tetranychid eggs and larvae, **381.**
Cybocephalus (predacious on Coccids), establishment of, in Bermuda, **269;** in France, **395;** in Morocco, **296;** in Trinidad, **269.**
Cybocephalus dactylicus, predacious on *Parlatoria blanchardii* in Morocco, **296.**
Cybocephalus flaviceps, predacious on *Parlatoria blanchardii* in Morocco, **296.**
Cybocephalus palmarum, predacious on *Parlatoria blanchardii* in Libya, **297.**
Cycas revoluta, effect of, as food-plant on *Aonidiella aurantii* and its parasites, **393.**
Cyclamen Mite (see *Steneotarsonemus pallidus*).
cyclogaster, Tetrastichus.
Cycloneda sanguinea, predacious on *Sipha flava* in Guadeloupe, **135.**
Cydia janthinana, bionomics and control of, on apple in Switzerland, **469.**
Cydia molesta, on peach in U.S.A., **93, 219, 234, 237;** parasites of, **93, 94, 237;** sprays against, **93, 94, 219, 234;** toxicity of spray deposits to parasites of, **93, 94.**
Cydia nigricana, DDT against, on peas in Holland, **330.**
Cydia pomonella (Codling Moth), in South Australia, **242, 323;** outbreaks of, in Western Australia, **33;** in Canada, **190, 317, 480;** in Germany, **400, 461;** in Switzerland, **294, 469;** in U.S.A., **58;** in Yugoslavia, **288;** on pear, **469;** bionomics of, **461;** factors affecting development of eggs of, **294;** egg-parasite of, **288;** Mirid possibly predacious on, **190;** insecticide sprays against, **242, 343, 480;** not controlled by sprays of *Bacillus cereus*, **317;** light-trap for timing sprays against, **400;** DDT-resistant strains of, **58, 59, 242, 323.**
Cydia pseudonectis, bionomics of, on *Crotalaria juncea* in India, **161, 475;** on *Sesbania bispinosa*, **161;** time of sowing in relation to, **475.**
Cydia toreuta, bionomics of, reducing seed production of *Pinus* spp. in Ontario, **390, 482;** parasites of, **390.**
Cydia youngana, reducing seed production of *Picea glauca* in Canada, **188.**
cydoniae, Tetrastichus.
Cylas formicarius elegantulus, insecticides controlling, on sweet potato in Louisiana, **50.**
cylindricollis, Sitona.
cylindrus, Platypus.
Cynaeus angustus, used in tests of sulphuryl fluoride, **88.**
Cyperus, relation of *Nomadacris septemfasciata* to, in Tanganyika, **370;** Lepidoptera infesting, in Uganda, **303.**
Cyprus, *Ceratitis capitata* in, **24;** *Myzocallis maculata* on lucerne in, **230.**
Cyrtopeltis tenuis, sprays against, on tobacco in Philippines, **107.**
Czechoslovakia, pests of fruit and forest trees in, **289, 325, 398;** pests of vegetables in, **320, 325, 326;** natural enemies and diseases of noxious insects in, **289, 325, 326, 398.**
Czenspinskia lordi, mites predacious on, in Germany, **203, 402, 403.**

D.

2,4 - D (see 2,4 - Dichlorophenoxyacetic Acid).
dacia, Acontia.
Dacinae, host-fruits of, in Queensland, **320.**
Dacnusa gracilis, parasite of *Psila rosae* in Norway, **36.**
dactylicus, Cybocephalus.
dactyliperda, Coccotrypes.
Dactylis glomerata, thrips causing seed reduction of, in New Zealand, **257.**
Dacus cucurbitae, host-fruits and ecology of, in Hawaii, **446, 507, 508;** effect of host-fruit on control of, by *Opius fletcheri*, **508;** sprays and bait-sprays against, **446, 508;** plastic trap for, **350.**

Dacus dorsalis, host-fruits and parasite of, in Hawaii, **90**; on banana in India, **475**; bait-sprays and sprays against, **90, 91**; plastic trap for, **350**.
Dacus oleae, sprays against, on olive in Yugoslavia and Greece, **5, 467**.
Dacus passiflorae, found in New Zealand in aircraft from Pacific Is., **158**.
Dacus tryoni (Queensland Fruit-fly), effect of light on feeding and oviposition by, **358, 359**; method for artificial infestation of fruits with, **374**.
Dadap (see *Erythrina lithosperma*).
daedalus, *Castnia*.
Dahlbominus fuscipennis (parasite of Diprionine sawflies), established in New Brunswick, **485**; in Yugoslavia, **288**; bionomics of, **288**; resistance of, to heat, **331**.
Dakota, North, *Tetanops myopaeformis* on beet in, **123, 280**; new Dermestid in stored wheat in, **262, 334**; insects destroying grasshopper egg-pods in, **308**.
Dakota, South, *Diabrotica virgifera* in, **175**; *Hypera variabilis* in, **430**.
Dalbulus elimatus, experiments with stunt virus diseases of maize and, in Mexico, **493**.
Dalbulus maidis, experiments with stunt virus diseases of maize and, in Mexico, **17, 493**.
dalmanni, *Telenomus* (*Aholcus*).
Dappula tertia, on tea in India, **114**.
darwiniensis, *Mastotermes*.
Dasyneura affinis, bionomics and parasites of, in *Viola odorata* in Germany, **245**.
Dasyneura brassicae (on rape), sprays against, in France, **456**; in Germany, **401**; oviposition habits of, **401**.
Dasyneura canadensis, reducing seed production of *Picea glauca* in Canada, **188**.
Dasyneura rachiphaga, reducing seed production of *Picea glauca* in Canada, **188**.
Dasyneura tetensi, bionomics and control of, on black currant in Britain, **248**.
Date Palm, *Parlatoria blanchardii* on, in North Africa, **296, 297**; *Raoiella indica* on, in Mauritius, **167**; *Schistocerca gregaria* injuring, in Socotra, **504**.
Dates, insects infesting stored, **297**.
Datura stramonium, used in experiments with insects and virus diseases of plants, **492, 495**.
D-D Mixture (1,2-dichloropropane and 1,3-dichloropropene), as soil fumigant against *Cotinis nitida*, **60**; treatment of nests of *Macrotermes goliath* with, **151**.
DDA (see Bis(p-chlorophenyl)acetic Acid).
DDD, against *Cotinis nitida*, **60**; against Lepidoptera, **54, 55, 95, 131, 217, 228, 389, 422, 440, 445**; development of resistance to, in *Eulia velutinana*, **445**; against *Melanagromyza phaseoli*, **322**; toxicity of, to stored product beetles, **236**; ten-year effectiveness of soil treatment with, against *Reticulitermes flavipes*, **225**; in dusts, **55, 60, 95, 131**; treatment of tobacco buds with dust of, **228**; in sprays, **54, 55, 131, 217, 228, 322, 389, 422, 440, 445**; residues of, in juice of sprayed tomatos, **389**; and malathion, **131**.
DDE (see 1,1-Bis(p-chlorophenyl)-2, 2-dichloroethylene).
DDT, against *Bemisia tabaci*, **368**; against Cicadellids, **228, 236, 279, 337, 368, 444, 477, 494**; against Coccids, **97, 112, 116, 396, 486, 487**; against Mirids, **30, 44, 106, 107, 109, 209, 212, 219, 228, 254, 438**; against *Myzocallis maculata*, **175**; favouring infestation by Aphids, **15, 407, 492**; against other Hemiptera, **10, 97, 151, 152, 164, 245**; against Curculionids, **4, 47, 61, 84, 106, 142, 219, 234, 279, 341, 361, 367, 438, 443, 444, 462**; against Elaterids, **63, 178, 187, 282, 480**; against other Coleoptera, **47, 60, 99, 126, 149, 178, 238, 248, 270, 301, 320, 329, 354, 368, 387**; against Cecidomyiids, **249, 362, 373, 456**; against *Hylemyia* spp., **178, 271, 389, 430, 431, 434**; against Trypetids, **90, 275, 508**; against other Diptera, **72, 204, 322, 345, 434**; ineffective against *Iridomyrmex humilis*, **33**; use of, to kill ants in fruit-fly traps, **350**; against Noctuids, **40, 44, 50, 51, 52, 55, 92, 100, 107, 109, 137, 154, 164, 165, 187, 193, 212, 227, 244, 276, 279, 295, 322, 323, 342, 354, 364, 389, 407, 425, 438, 439, 440, 443, 444, 474, 507**; against Pyralids, **14, 56, 94, 276, 277, 322, 351**; against other Lepidoptera, **23, 47, 60, 61, 69, 71, 75, 93, 95, 106, 107, 127, 131, 192, 195, 221, 223, 227, 234, 242, 259, 260, 279, 284, 289, 323, 329, 330, 391, 418, 426, 438, 480, 487, 488, 506**; resistance to, in strains of Lepidoptera, **58, 59, 193, 221, 242**; against Orthoptera, **107, 154, 279**; ineffective against *Melanoplus* spp., **228**; favouring *Sminthurus viridis*, **278**; against termites, **164, 225, 447**; against Thysanoptera, **6, 258, 349, 366, 478**; strain of *Diarthrothrips coffeae* possibly resistant to, **366**; against *Torymus varians*, **117**; against mites, **32, 45, 277,**

278; favouring infestation by mites, 106, 323, 507; effect of, on insect parasites and predators, 87, 88, 93, 219, 275, 289; risk of, to bees, 275; laboratory tests of toxicity of, to insects, 7, 10, 20, 93, 107, 127, 149, 151, 154, 174, 193, 202, 236, 270, 301, 322, 344, 391, 408, 419, 422, 427, 470, 486; toxicity of, to fish, 277; effects of, on plants, 14, 15, 20, 204, 432, 433, 471; residues of, on plants or fruit, 57, 234, 329, 330, 342, 389, 425; in aerosols, 227, 289, 320; in baits, 228; in dusts, 14, 20, 23, 30, 40, 44, 45, 50, 52, 60, 72, 92, 95, 174, 192, 193, 195, 221, 228, 244, 259, 260, 271, 277, 279, 301, 322, 329, 344, 350, 361, 362, 364, 408, 418, 438, 443, 444, 462, 480, 486, 487, 506; study of adsorption of, on dust carriers, 339; in granules, 56, 57, 94, 99, 351; as smoke, 345; in sprays, 4, 6, 12, 19, 20, 30, 32, 33, 44, 45, 50, 52, 55, 56, 59, 60, 61, 71, 72, 75, 84, 90, 93, 94, 95, 97, 100, 106, 107, 109, 116, 117, 127, 131, 137, 142, 151, 154, 155, 164, 165, 175, 178, 185, 187, 195, 209, 212, 219, 221, 223, 228, 234, 236, 238, 242, 244, 245, 248, 249, 254, 258, 259, 260, 270, 275, 276, 277, 279, 284, 295, 301, 322, 323, 329, 337, 342, 349, 351, 361, 366, 367, 368, 373, 387, 389, 391, 396, 407, 419, 422, 425, 426, 431, 434, 438, 440, 443, 444, 456, 470, 474, 477, 478, 480, 486, 487, 488, 492, 494, 506, 507, 508; applied from aircraft, 187, 221, 244, 277, 289, 320, 426, 486, 488; tree trunks or logs treated with, 69, 126, 367; persistence of, on trunks of coffee trees, 367; seed treatment with, 204, 341, 389; treatment of other planting material with, 112, 142, 271, 361, 486; soil treatment with, 60, 164, 185, 187, 225, 244, 249, 282, 430, 431, 432; persistence of, in treated soil, 187, 225; accumulation of, in soil, 426, 427; effect of, on soil micro-organisms, 156; effect on Tetranychus spp. of feeding on plants in soil treated with, 432, 433; uses of, against pests of stored products, 47, 149; solutions of, 71, 126, 320, 391, 427, 486, 487; emulsified solutions of, 12, 44, 56, 60, 94, 100, 106, 107, 117, 127, 164, 178, 187, 209, 221, 228, 242, 270, 276, 322, 323, 367, 368, 387, 422, 430, 440, 456, 470, 478, 487; in wettable-powder suspensions, 20, 84, 90, 93, 97, 106, 127, 131, 154, 185, 219, 234, 249, 258, 259, 260, 270, 271, 323, 337, 341, 342, 396, 419; with aldrin, 228; with Bayer 17147, 52, 60, 61; with BHC, 44, 52, 95, 164, 165, 216, 221, 259, 260, 301, 344, 349, 407, 438; with activated charcoal, 20; affecting colorimetric analysis of chlorbenside residues, 134; with chlordane, 221, 228; with Chlorthion, 151, 152; with copper oxychloride, 32; with demeton, 507; with diazinon, 151, 152, 456; with dieldrin, 60, 61, 219, 228, 344, 438, 443, 444; with Dilan, 492; with Dipterex, 443; with endrin, 438; with EPN, 50, 443; with ferbam, 480; with Guthion, 438, 439, 443, 444; with heptachlor, 228, 344; with lead arsenate, 84; with lime, 69, 337; with lime-sulphur, 480; with malathion, 92, 97, 151, 152, 227, 443, 487, 494; with methyl-parathion, 50, 438, 443; with molasses, 106; with oil emulsions, 55, 97, 116, 244, 337, 396; linseed oil as adhesive for, 127, 391; with parathion, 50, 92, 152, 278, 487; with Phosdrin, 438; with pyrethrum, 14, 227; with rotenone, 14; with Strobane, 52; with sulphur, 52, 221, 322, 438, 480; with superphosphate, 277; with toxaphene, 44, 45, 50, 52, 95, 100, 175, 221, 228, 425, 443, 444; methods of determination of, 12, 367, 509; proprietary preparations containing, 142, 487.

DDVP (see Dimethyl 2,2-Dichlorovinyl Phosphate).

2, 3, 3a, 4, 5, 6, 7, 7a, 8, 8 - Decachloro-3a, 4, 7, 7a - tetrahydro - 4, 7 - methanoindene - 1 - one, in sprays against *Conotrachelus nenuphar*, 84.

decemlineata, *Leptinotarsa*.

Delassor, list of species and subspecies of, in Venezuela, 453.

Delassor tristis, importance of, on sugarcane and grasses in Venezuela, 452.

Delaware, insects on lucerne in, 184, 185.

Delia (see *Hylemyia*).

Delphacodes pellucida, bionomics and parasite of, on cereals and grasses in Finland, 405; symptoms associated with, on oats, 405; tests of insecticides against, 405.

Delphacodes striatella, transmitting rice stripe virus in Japan, 453.

Deltocephalus pulicaris, infesting lawn grasses in Rhode Island, 236; sprays against, 236.

Demeton (diethyl 2-(ethylthio)ethyl phosphorothioate), against *Aleurocanthus woglumi*, 73; against Aphids, 139, 175, 285, 341, 354, 386, 424, 430, 439, 450, 493, 496; against Cicadellids, 174, 228, 337, 425; against Coccids, 90, 470, 486; against other Hemiptera, 119, 174, 286; against Coleoptera,

223, 348, 341, 424; lack of contact action of, on *Conotrachelus nenuphar*, **219;** against Diptera, **90, 97, 98, 217;** ineffective against grasshoppers, **228;** against Lepidoptera, **106, 487;** against mites, **32, 34, 58, 138, 139, 140, 176, 177, 214, 225, 261, 282, 285, 286, 292, 424, 429, 439, 448, 450, 463, 507;** effect of, on beneficial insects, **139;** dusting with, **176;** in sprays, **34, 58, 73, 90, 97, 106, 108, 138, 139, 140, 175, 176, 177, 214, 217, 225, 228, 232, 248, 261, 282, 285, 286, 292, 337, 341, 386, 424, 429, 430, 448, 450, 463, 470, 486, 487, 493, 496, 507;** spray mixtures of fungicide or insecticides and, **337, 507;** tests of systemic action and other methods of application of, **97, 119, 174, 223, 248, 286, 341, 424, 425, 496;** responses of cotton to, **108;** residues of, in fruits, **232, 337;** assay of, by cholinesterase inhibition, **108, 232;** isomers of (see Demeton-O and Demeton-S).

Demeton-O (O,O-diethyl O-2-(ethylthio)-ethyl phosphorothioate), penetration, spread and metabolites of ^{32}P-labelled, in plants, **46, 336.**

Demeton-S (O,O-diethyl S-2-(ethylthio)-ethyl phosphorothioate), systemic behaviour of, in plants, **46, 182, 183, 229, 424;** metabolism and oxidation products of, in plants, **46;** methods of treating plants with, **424;** toxicity of, to insects and mites, **183, 424;** effect of, on fly-brain cholinesterase, **46;** radioactive-tracer in studies of, **46, 183, 424.**

Demeton-S Methosulphate (see O,O-Diethyl S-2-(Ethylthio)ethyl Phosphorothioate Methosulphate).

dendroctoni, Coeloides.

Dendroctonus brevicomis, on *Pinus ponderosa* in U.S.A., **427;** tests of toxicity of insecticides to, **427.**

Dendroctonus monticolae (see *D. pondorosae*).

Dendroctonus pondorosae, distribution of, on pines in U.S.A., **263;** crossing experiments and host-trees indicating synonymy of *D. monticolae* with, **263.**

Dendroctonus pseudotsugae (on *Pseudotsuga menziesii*), competition of *Pseudohylesinus nebulosus* with, in British Columbia, **10, 11;** in U.S.A., **125, 218, 489;** bionomics and parasite of, **489;** effects of temperature on, **125, 489;** insecticides against, **218.**

Dendroctonus terebrans, methods of attack on *Pinus* spp. by, in Florida, **215.**

Denmark, newly recorded species of *Myzus* in, **79, 405.**

deplanatus, Pseudomicromelus.

depressa, Bdella.

depunctalis, Nymphula.

Deraeocoris nebulosus, predacious on apple pests in Nova Scotia, **190;** insecticides harmful to, **190.**

Dermacentor variabilis, mortality of, at low temperature, **235.**

Dermestes lardarius, water-trap detecting, in stored grain in Manitoba, **392;** susceptibility of, to pyrethrum in oil, **171.**

Dermestes maculatus, dusts against, in bones in Britain, **149;** amount of food required by, **173.**

Dermolepida, revision of, **106.**

Dermolepida albohirtum, BHC against, on sugar-cane in Queensland, **375.**

Dermolepida noxium, sp. n., on cacao in Papua, **106;** parasite of, **106.**

Derris, tests of, against Hemiptera, **120, 319;** dust of nicotine and, **120.**

Descurainia, species of, as food-plants of *Circulifer tenellus* in Idaho, **122.**

Desert Locust (see *Schistocerca gregaria*).

desertorum, Tetranychus.

Desmodium uncinatum, Orosius argentatus transmitting little-leaf virus of, in Queensland, **31.**

destructor, Aspidiotus; *Clania*; *Halotydeus*; *Mayetiola* (*Phytophaga*); *Tribolium.*

deviatarsus, Tetranychus (see *T. ludeni*).

Dextrose, in medium for rearing *Drosophila*, **132.**

Diabrotica balteata, insecticides against, on sweet potato in Louisiana, **49.**

Diabrotica longicornis, insecticides against, on maize in Wisconsin, **91.**

Diabrotica undecimpunctata, experiments with virus diseases of squash and, in California, **16.**

Diabrotica undecimpunctata howardi, dusts controlling, on squash in Ontario, **23.**

Diabrotica virgifera, bionomics of, on maize, etc., in U.S.A., **175.**

Diacrisia maculosa, on rice in French Cameroons, **365.**

Diacrisia punctulata, on rice in French Cameroons, **365.**

Diacrisia scortilla, parasites of, on rice in French Cameroons, **30, 365.**

diadema, Leskiopalpus.

Diaeretus rapae, parasitising *Brevicoryne brassicae* in New Zealand, **373;** parasite of, **373.**

diagonalis, Parerupa (see *P. africana*).

Dialeurodes citrifolii, as food for larvae of *Chrysopa lateralis*, **312.**
dianthicola, *Pseudonapomyza.*
Dianthus caryophyllus (see Carnation).
Dianthus chinensis, *Bryobia* on, in New Zealand, **33.**
Diaphania nitidalis, bionomics of, on cucurbits in U.S.A., **14, 60;** measures against, **14, 15.**
Diarthronomyia chrysanthemi, sprays against, on chrysanthemum in New Zealand, **373.**
Diarthrothrips coffeae, sprays against, on coffee in Tanganyika, **366;** question of resistance to insecticides in, **366.**
diaspidis, *Aphytis.*
Diastema tigris, introduced into Fiji against *Lantana camara*, **105.**
Diatomaceous Earth, study of adsorption of insecticides on, **339.**
Diatomite, tests of Nigerian, against pests of stored products, **150.**
Diatraea africana (see *Parerupa*).
Diatraea canella (see *Eodiatraea centrella*).
Diatraea grandiosella (see *Zeadiatraea*).
Diatraea impersonatella (on sugar-cane), in British Guiana, **356;** in Trinidad, **134, 135;** parasites of, **134.**
Diatraea rosa, rearing and value of *Metagonistylum minense* against, on sugar-cane in Venezuela, **356.**
Diatraea saccharalis (on sugar-cane), in British Guiana, **356;** in Peru, **500;** in Venezuela, **356;** in West Indies, **134, 135;** parasites and biological control of, **134, 135, 356, 500, 501;** Hanane against, **356.**
diatraeae, *Lixophaga*; *Microdus* (see *Agathis stigmatera*).
Diazinon (O,O-diethyl O-2-isopropyl-4-methyl-6-pyrimidinyl phosphorothioate), against Aphids, **139, 336, 430;** against Coccids, **90, 112, 192, 297, 470;** against other Hemiptera, **151, 152, 174, 337;** against Coleoptera, **105, 219;** against Diptera, **7, 217, 322, 434, 456, 467;** against Lepidoptera, **6, 49, 78, 131, 242, 259, 260, 279, 323, 342, 420, 469, 488;** against *Thrips tabaci*, **349;** against mites, **140, 176, 274, 282, 442;** laboratory tests of toxicity of, to insects, **7, 49, 105, 174, 217, 219, 279, 420, 470;** low toxicity of, to mammals, **467;** in dusts, **174, 176, 430;** in sprays, **6, 49, 78, 90, 112, 131, 139, 140, 151, 152, 192, 217, 242, 259, 260, 274, 282, 297, 322, 323, 336, 337, 342, 349, 420, 430, 434, 442, 456, 467, 469, 470, 488;** pineapple suckers dipped in, **112;** residues of, on apples and olives, **242, 467;** and DDT, **151, 152, 456;** and fungicide mixture, **337;** and oil emulsion, **274, 297, 337.**
Dibenzyl Di- and Monosulphides, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Dibrachys cavus, parasite or hyperparasite of Lepidoptera in Canada and U.S.A., **127, 315, 384.**
Dichlone (see 2,3-Dichloro-1,4-naphthoquinone).
o-Dichlorobenzene, solution of, against *Dendroctonus pseudotsugae*, **218.**
p-Dichlorobenzene, toxicity and repellency of, to larvae of *Attagenus megatoma*, **344;** treatment of nests of *Macrotermes goliath* with, **151.**
1, 2 - Dichloro-1, 2-bisphenylthioethylene, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Dichloroethyl Ether, solution of, against *Dendroctonus pseudotsugae*, **218.**
2, 3 - Dichloro - 1, 4 - naphthoquinone, effect of sprays of, on injurious and beneficial mites, **85;** treatment of maize seed with insecticides and, **93.**
2,4-Dichlorophenoxyacetic Acid, in BHC spray, **418;** effect on *Citrus* fruits of oil emulsions containing, **182.**
Di(p-chlorophenoxy)methane (Neotran), effect of, against *Tyroglyphus farinae* in flour, **53.**
Di(p-chlorophenyl), compounds containing (see Bis(p-chlorophenyl)).
2,4-Dichlorophenyl Benzenesulphonate (in sprays), against mites, **281, 355, 442;** effect of, on beneficial arthropods, **190;** tainting of fruits by, **281.**
Dichocrocis punctiferalis, experiment with, as host for *Bracon gelechiae* in India, **13.**
Dichroplus spp., denuding grazing lands in Uruguay, **406.**
dichroum, *Apion.*
Dicladispa paucispina, on rice in French Cameroons, **365.**
Dicranoctetes saccharella, on sugar-cane in Peru, **501.**
Dicranotropis muiri, bionomics and natural enemies of, on sugar-cane in Mauritius, **371, 372;** association of *Glomerella tucumanensis* with, **371.**
Dieldrin, against ants, **32, 33, 211, 254;** use of, to kill ants in fruit-fly traps, **350;** against Curculionids, **48, 51, 52, 61, 84, 107, 181, 184, 185, 187, 219, 234, 341, 343, 361, 367, 428, 430, 438, 441, 443, 446, 462;** strain of *Anthonomus grandis* resistant to, **344;** against Elaterids, **63, 178, 187, 282, 451;** development of resistance to, in

Conoderus falli, **63**; against Lamellicorns, **50, 60, 99, 178, 220, 221, 235**; against other Coleoptera, **50, 223, 238, 301, 354, 368**; against fruit-flies, **90, 91, 275**; reactions of *Dacus dorsalis* to, **90**; against *Hylemyia* spp., **178, 271, 389, 430, 431, 434**; against other Diptera, **90, 91, 123, 124, 204, 322, 423, 434, 464, 465**; against Mirids, **30, 107, 211, 219, 228, 254, 446**; against other Hemiptera, **73, 185, 187, 228, 354**; against Noctuids, **60, 61, 137, 153, 154, 164, 205, 295, 296, 323, 387, 388, 438, 440, 444, 449**; against other Lepidoptera, **23, 56, 60, 61, 75, 106, 107, 153, 234, 276, 277, 351, 418, 438**; against *Schistocerca gregaria*, **505, 506**; against other Orthoptera, **154, 155, 228**; against termites, **151, 226, 447**; against Thysanoptera, **94, 331, 349, 366, 445, 446, 478**; against mites, **50, 259, 442**; mites favoured by, **106**; effect of, on nutritive value of plants for *Tetranychus* spp., **432, 433**; effects of, on beneficial insects, **90, 275**; laboratory tests of toxicity of, to insects, **7, 154, 162, 174, 219, 237, 344, 419, 470**; in bait, **206**; in dusts, **23, 30, 50, 60, 162, 174, 271, 343, 344, 361, 367, 388, 418, 438, 462**; in granules, **56, 99, 124, 178, 181, 185, 187, 220, 221, 235, 350, 351, 430, 434, 441**; in sprays, **30, 32, 33, 48, 50, 52, 60, 61, 73, 75, 84, 90, 107, 137, 153, 154, 164, 178, 181, 184, 205, 211, 219, 228, 234, 235, 238, 254, 259, 271, 275, 276, 277, 295, 296, 301, 322, 323, 331, 349, 361, 366, 368, 419, 428, 430, 431, 434, 438, 440, 441, 442, 443, 444, 445, 446, 470, 471, 478, 505, 506**; applied from aircraft, **221, 505, 506**; soil treatment with, **50, 63, 90, 91, 123, 124, 151, 178, 181, 187, 223, 226, 235, 282, 343, 387, 388, 430, 431, 432, 433, 434, 449**; applied in fertiliser, **50, 123**; persistence of, in soil, **187, 226, 343, 441**; effect of, on soil micro-organisms, **156**; seed treatment with, **20, 21, 93, 124, 204, 341, 389, 431, 451**; in dips for seedlings or bulbs, **361, 464, 465**; treatment of banana trap material with, **367**; cloth impregnated with, for screening greenhouses, **94**; effects of, on plants, **20, 21, 84, 123, 124, 295, 296, 432, 433, 438, 471**; residues of, on peaches and spinach, **234, 434**; effect of, on fish, **154, 221, 277**; in butter and fat of mammals, **99, 100**; and BHC, **462**; and DDT, **60, 61, 219, 228, 344, 438, 443, 444**; compatibility of, with fungicides, **84, 93, 107**; and phosphorus insecticides, **331, 349, 438**; and sulphur, **438**; as oxidation product of aldrin in animals, animal products and soil, **99, 437**; bioassay and colorimetric determination of, **99**.

diemenalis, *Nacoleia* (*Lamprosema*).

O,O-Diethyl S-p-Chlorophenylthiomethyl Phosphorodithioate (see Trithion).

Diethyl 2-(Diethylamino)ethyl Phosphorothioate (as its thiol and thiono isomers and salts), systemic behaviour and toxicity to arthropods of, in plants, **182, 183, 424**; amounts of, in sprayed *Citrus* fruits, **183**; labelled with ^{32}P, **182**; assay of, by cholinesterase inhibition, **183**.

O,O-Diethyl S-2-(Ethylsulphinyl)ethyl Phosphorodithioate, as metabolite of dithio-Systox in plants, **229**; synthesis and properties of, **229**.

O,O-Diethyl O-2-(Ethylsulphinyl)ethyl Phosphorothioate, as metabolite of demeton-O in cotton, **336**.

O,O-Diethyl S-2-(Ethylsulphinyl)ethyl Phosphorothioate, systemic behaviour and metabolism of ^{32}P-labelled, in plants, **46**; as metabolite of dithio-Systox in plants, **229**; synthesis and properties of, **229**.

O,O-Diethyl S-2-(Ethylsulphonyl)ethyl Phosphorodithioate, as metabolite of dithio-Systox in plants, **229**; synthesis and properties of, **229**.

O,O-Diethyl O-2-(Ethylsulphonyl)ethyl Phosphorothioate, metabolite of demeton-O in cotton, **336**.

O,O-Diethyl S-2-(Ethylsulphonyl)ethyl Phosphorothioate, as metabolite of dithio-Systox in plants, **229**; synthesis and properties of, **229**.

O,O-Diethyl S-2-(Ethylthio)ethyl Phosphorodithioate, against Aphids, **177, 285, 424, 436**; against other insects, **285, 286, 424, 425, 435, 436**; against mites, **285, 286, 424**; contact toxicity to insects of, **285, 286**; as systemic insecticide, **177, 228, 285, 286, 424, 425, 435, 436**; radioactive-tracer studies of translocation and metabolism of, in plants, **228, 229, 424**; synthesis and properties of metabolites of, **229**; impairing germination of seeds, **425**; toxicity of, to mammals, **285**; analogues of, **285, 286**.

Diethyl 2-(Ethylthio)ethyl Phosphorothioate (see Demeton).

O,O-Diethyl O-2-(Ethylthio)ethyl Phosphorothioate (see Demeton-O).

O,O-Diethyl S-2-(Ethylthio)ethyl Phosphorothioate (see Demeton-S).

O,O-Diethyl S-2-(Ethylthio)ethyl Phosphorothioate Methosulphate, toxicity of, to insects and mites, **46**; inhibition of fly-brain cholinesterase by, **46**; systemic behaviour of, in plants, **46**; labelled with ^{32}P, **46**.
O,O-Diethyl S-Ethylthiomethyl Phosphorodithioate (see Thimet).
O,O-Diethyl O-2-Isopropyl-4-methyl-6-pyrimidinyl Phosphorothioate (see Diazinon).
O,O-Diethyl S-Isopropylthiomethyl Phosphorodithioate), in sprays against mites and insects, **176, 220, 336**; treatment of wheat seed with, against wireworms, **451**; seed or soil treatments with, as systemic insecticide, against pests of cotton and beet, **91, 92, 174, 424, 449**.
Diethyl 3-Methyl-5-pyrazolyl Phosphate, alone or with Isolan in sprays against mites and Aphids, **138, 139, 140**; tests of toxicity of, to *Acontia dacia*, **49**; ineffective for seed treatment of cotton as systemic insecticide, **424**; effect of, on beneficial insects, **139**.
O,O-Diethyl S-2-(Methylthio)ethyl Phosphorodithioate, toxicity of, to mammals, **285, 286**; as contact or systemic insecticide, **286**.
O,O-Diethyl S-(4-Oxo-benzotriazino-3-methyl) Phosphorodithioate, in sprays against cotton pests, **52, 60**; seed treatment of wheat with, against *Ctenicera pruinina noxia*, **451**.
O,O-Diethyl O-2-Propyl-4-methyl-6-pyrimidinyl Phosphorothioate, tests of toxicity of, to *Rhagoletis cingulata*, **217**.
O,O-Diethyl S-2-(Propylthio)ethyl Phosphorodithioate, toxicity of, to mammals, **285, 286**; unpromising as contact or systemic insecticide, **286**.
O,O-Diethyl S-n-Propylthiomethyl Phosphorodithioate, in spray against *Zeadiatraea grandiosella*, **220**; seed treatment with, as systemic insecticide against cotton pests, **91, 424, 449**.
differentialis, Melanoplus.
O,O-Diisopropyl N,N-Diethylthiocarbamyl Phosphorodithioate, in sprays against *Tetranychus* spp., **176, 177**.
O,O-Diisopropyl S-Isopropylthiomethyl Phosphorodithioate, seed treatment with, as systemic insecticide against cotton pests, **449**.
Dilan (mixture of 1,1-bis(p-chlorophenyl)-2-nitropropane and -2-nitrobutane), against *Conotrachelus nenuphar*, **84**; against fruit-flies, **90, 217**; against Lepidoptera, **95, 221, 342**; favouring infestation by Aphids, **15, 492**; in dust, **15**; in sprays, **84, 90, 95, 217, 221, 342, 492**; and DDT, **492**; mixtures of other insecticides with, in aerosols against pests of vegetables, **227**.
dilatata, Paropsis.
dilaticollis, Tanymecus.
Dimefox (bis(dimethylamino) fluorophosphine oxide), in sprays against *Bryobia praetiosa*, **34**; tests of soil applications and systemic action of, against insects, **115, 138, 164, 356**; effect of, on plants, **115, 138**; residues of, in hops and grapes, **115, 138**.
O,O-Dimethyl O-2-Chloro-4-nitrophenyl Phosphorothioate, tests of toxicity of, to insects, **217, 236**.
O,O-Dimethyl O-3-Chloro-4-nitrophenyl Phosphorothioate (see Chlorthion).
Dimethyl 2, 2-Dichlorovinyl Phosphate, in traps for *Ceratitis capitata*, **350**; against Coleoptera, **52, 227**; against *Platyedra gossypiella*, **60**; against *Tetranychus atlanticus*, **227**; laboratory tests of toxicity of, to *Rhagoletis cingulata*, **217**; in dusts, **52**; in sprays, **52, 60, 227**; and Aroclor, **52, 60**; and endrin, **60**.
O,O-Dimethyl S-(1,2-Di(ethoxycarbonyl)-ethyl) Phosphorodithioate (see Malathion).
O,S-Dimethyl S-(1, 2-Di(ethoxycarbonyl)-ethyl Phosphorodithioate (see Isomalathion).
O,O-Dimethyl S-(1,2-Di(ethoxycarbonyl)ethyl) Phosphorothioate (see Malaoxon).
O,O-Dimethyl S-2-(Ethylthio)ethyl Phosphorodithioate (Bayer 23129), against Aphids, **139, 177, 499, 500**; toxicity of, to other insects and to mammals, **285, 286**; in sprays, **139, 499, 500**; tests of systemic action and other methods of application of, **177, 286**; lucerne injured by, **177**.
Dimethyl 2-(Ethylthio)ethyl Phosphorothioate (see Methyl-demeton).
O,O-Dimethyl S-2-(Ethylthio)ethyl Phosphorothioate (see Methyl-demeton-S).
Dimethyl 2-Methoxycarbonyl-1-methylvinyl Phosphate, against *Anthonomus grandis*, **344, 438**; against Aphids, **124, 430**; against Lepidoptera, **93, 187, 220, 425, 438**; tests of toxicity of, to *Rhagoletis cingulata*, **217**; against *Thrips tabaci*, **349**; in dusts, **93, 344, 430**; in sprays, **124, 187, 220, 349, 425, 430, 438**; applied by aircraft, **187, 425**; and DDT, **438**.
O,O-Dimethyl S-2-(Methylthio)ethyl Phosphorodithioate, toxicity of, to

mammals, **285, 286;** as contact or systemic insecticide, **286.**
O, O-Dimethyl S-(4-Oxo-benzotriazino-3-methyl) Phosphorodithioate (Bayer 17147, Guthion), against *Anthonomus grandis*, **48, 52, 61, 344, 438, 443, 444, 446;** toxicity of, to strains of *A. grandis*, **344, 450;** against other Coleoptera, **219, 451;** against Aphids, **61, 336, 438;** against Diptera, **434;** ineffective against *Erythroneura comes*, **337;** against Lepidoptera, **49, 52, 60, 61, 93, 342, 407, 438, 443, 444, 488;** against *Psallus seriatus*, **444;** against Thysanoptera, **349, 445, 446;** against mites, **61, 507;** in dusts, **52, 93, 344, 438, 443, 444, 446;** in sprays, **48, 49, 52, 60, 61, 219, 336, 337, 342, 349, 407, 434, 438, 443, 444, 445, 446, 488, 507;** treatment of wheat seed with, **451;** effect of weather on toxicity of, **48;** and DDT, **52, 60, 61, 438, 443, 444;** and demeton, **507.**
2 - (O,O-Dimethyl Phosphorothiolomethyl)-5-methoxy-4-pyrone (see Endothion).
Dimethyl 2,2,2-Trichloro-1-hydroxyethylphosphonate, in sprays: against *Anthonomus grandis*, **52, 443, 446;** ineffective against *Brevicoryne brassicae*, **430;** against *Dasyneura brassicae*, **456;** against Lepidoptera, **323, 444;** against *Psallus seriatus*, **444, 446;** against Thysanoptera, **349, 446;** seed treatment of wheat with, against *Ctenicera pruinina noxia*, **451;** tests of toxicity of, to *Rhagoletis cingulata*, **217;** against *Tyroglyphus farinae* in flour, **53;** and DDT, **443, 444.**
O,O-Dimethyl O-2,4,5-Trichlorophenyl Phosphorothioate, in sprays: against *Brevicoryne brassicae*, **430;** against Diptera, **434.**
dimidiata, *Banasa*.
dimidiatus, *Carpophilus*.
Dimite (see 1,1-Bis(p-chlorophenyl)-ethanol).
Dinex, *Vasates lycopersici* not controlled by dust of dicyclohexylamine salt of, **50.**
Dinoseb (dinitro-sec.-butylphenol), as triethanolamine or dicyclohexylamine salt: ineffective in dust against *Tetranychus telarius*, **176;** alone or with tar distillate in sprays against *Panonychus ulmi*, **403, 404;** tests of toxicity of, to *Toumeyella numismatica*, **486.**
Diocalandra frumenti, *Pseudotheraptus wayi* favouring infestation of coconut by, in Zanzibar, **414.**
Dioctes (see *Angitia*).
Diopsis spp., bionomics and parasites of, on rice in French Cameroons, **29, 30.**
diopsisephila, *Melittobia*.
diopsisi, *Aprostocetus* (*Tetrastichus*); *Diourbelia*; *Eurytoma*.
Dioryctria abietella, reducing seed production of *Picea glauca* and pines in Canada, **188, 315, 316, 482;** bionomics of, **315, 316, 482;** parasites of, **315, 316.**
Dioryctria cambiicola, reducing seed production of *Pinus resinosa* in Ontario, **315, 316;** bionomics of, **316;** parasites of, **315, 316.**
Dioryctria disclusa, distribution of, in eastern N. America, **315;** bionomics of, reducing seed production of pines in Ontario, **315, 482;** parasites of, **315.**
Dioryctria reniculella, reducing seed production of *Picea glauca* in Canada, **188.**
dioryctriae, *Apanteles*.
Diospilus oleraceus (parasite of *Ceutorhynchus pleurostigma*), bionomics of, in Germany, **293.**
Diospyros kaki, new mite on, in Japan, **275.**
Diourbelia diopsisi, sp. n., parasite of *Diopsis servillei* in French Cameroons, **30.**
2,3-p-Dioxandithiol S,S-Bis(O,O-diethyl phosphorodithioate), against Aphids, **430, 499, 500;** against Lepidoptera, **49, 323;** against mites, **58, 176, 224, 225, 261, 429;** applied in fertiliser against *Tetanops myopaeformis*, **123;** in dusts, **176;** in sprays, **49, 58, 176, 224, 225, 261, 323, 429, 430, 499, 500;** and parathion, **429.**
Diparopsis, review of data on, on cotton in tropical Africa, **502.**
Diparopsis castanea, sprays against, on cotton in Swaziland, **407.**
Diparopsis watersi, bionomics, natural enemies and control of, on cotton in Sudan, **165, 166.**
Diphenyl Disulphide, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Diphenyl Sulphone, in sprays against *Bryobia praetiosa*, **34.**
Diplazon ornatus, parasite of *Syrphus arcuatus* in Austria, **201.**
diplosisae, *Platygaster*.
Diprion hercyniae (see *Gilpinia*).
Diprion pini (on pine), in Czechoslovakia, **325;** in Yugoslavia, **287, 288;** effect of cold on eonymphs of, **287;** natural enemies of, **288, 325.**
Diprion sertifer (see *Neodiprion*).

dipterae, Tetrastichus (*Epomphaloides*).
Dipterex (see Dimethyl 2,2,2-Trichloro-1-hydroxyethylphosphonate).
Dirhinus garouae, parasite of *Diopsis collaris* in French Cameroons, **30.**
disclusa, Dioryctria.
Disophrys lutea, parasite of *Laphygma exigua* in French Cameroons, **365.**
dispar, Lymantria (*Porthetria*).
disparis, Anastatus.
Dissosteira longipennis, outbreak and control of, in U.S.A., **308, 309.**
disstria, Malacosoma.
Distantiella theobroma, on cacao in West Africa, **209, 211, 254, 407;** on *Cola*, **407;** egg-counts and populations of, **211;** insecticides against, **209, 210, 211, 254.**
Distribution Maps, of insect pests, **240, 509.**
Dithane Z-78, **107.**
Dithio-Systox (see O,O-Diethyl S-2-(Ethylthio)ethyl Phosphorodithioate).
DN-111, **486.**
DN-289, **176, 486.**
DNC (in sprays), against Coccids, **5, 97;** in oil emulsion, against *Panonychus* (*Metatetranychus*) *ulmi*, **37, 404;** aircraft applications of oil solution of, against *Schistocerca gregaria*, **506.**
Dock, Curled (see *Rumex crispus*).
Dodder (see *Cuscuta*).
Dolichos lablab, Adisura atkinsoni on, in India, **472;** effect of rearing *Callosobruchus maculatus* on seeds of, **25.**
Doliopygus, infesting timber in West Africa, **408.**
Dolycoris baccarum, bionomics and natural enemies of, on cereals in Russia, **286.**
domestica, Musca.
domesticus, Acheta (*Gryllus*); *Cryptotermes.*
dominica, Rhizopertha.
Donacivola (see *Dicranoctetes*).
Doralis (see *Aphis*).
Dorcathispa bellicosa, on rice in French Cameroons, **365.**
Dorilas mauritianus, parasite of Delphacids in Mauritius, **371, 372.**
dorsalis, Dacus.
Douglas Fir (see *Pseudotsuga menziesii*).
Douglas Fir Beetle (see *Dendroctonus pseudotsugae*).
Dow ET-14 (see O,O-Dimethyl O-2,4,5-Trichlorophenyl Phosphorothioate).
Dow ET-15 (see O-Methyl O-2,4,5-Trichlorophenyl Phosphoramidothioate).
Draeculacephala antica, bionomics of, on forage crops in Rhode Island, **220.**
dregii, Calidea.
Drepanepteryx phalaenoides, predacious on *Chermes piceae* in Austria, **201.**
Dreyfusia (see *Chermes*).
dreyfusiae, Cnemodon.
Drino (see *Sturmia*).
Drosica abjectella, bionomics of, predacious on *Dysmicoccus brevipes* in Transvaal, **298.**
Drosicha stebbingi (*mangiferae*), on mango in India, **470;** toxicity of insecticides to, **470.**
Drosophila, fungi disseminated by, in harvested peaches in Ontario, **22.**
Drosophila buscki, **22.**
Drosophila immigrans, **22.**
Drosophila melanogaster, **22;** infesting tomatos in Ontario and California, **266, 345;** measures reducing oviposition by, in picked tomatos, **345;** contamination by, in tomato juice, **266;** as laboratory host for *Loxotropa tritoma*, **132;** techniques of rearing, **132, 351, 352;** trap for collecting reared adults of, **351;** uses of, for tests and bioassay of insecticides, **38, 39, 93, 436.**
Drosophila repleta, **22.**
Drugs, Tarsonemid infesting, in Japan, **379.**
druparum, Torymus (see *T. varians*).
Dryinus pyrillae, parasite of *Pyrilla perpusilla* in India, **421, 422;** bionomics of, **421;** parasite of, **422.**
Duchesnia indica, experiment with strawberry virus and, **146.**
dudgeoni, Oxycarenus.
dudleyi, Cryptotermes.
duplicatus, Necremnus.
durbanensis, Kalotermes.
Dusmetia indica, sp. n., parasite of *Antonina graminis* in India, **136.**
Dusts, applied from aircraft, **221, 244, 418, 429;** uptake and distribution of deposits of, by insects, **41, 42;** (inert), against insects in stored groundnuts, **150;** reducing oviposition by *Drosophila* on tomatos, **345;** (as carriers), adsorption and reactions of DDT and related insecticides on, **339.**
Dutch Elm Disease (see *Ceratostomella ulmi*).
dux, Sarcophaga.
dyari, Neodiprion (see *N. pratti*).
Dyscinetus bidentatus (see *Euetheola*).
Dysdercus, review of data on, on cotton in tropical Africa, **502.**
Dysdercus fasciatus, effect of temperature and humidity on development of, **246;** uptake of dust deposits by, **41.**

Dysmicoccus brevipes, in Ceylon, **112**; in Ghana, **210**; *Drosica abjectella* predacious on, in Transvaal, **298**; on groundnuts, **210**; on pineapple, **112, 210, 298**; experiments with cacao swollen-shoot virus and, **210**; insecticides against, causing pineapple wilt, **112**; strains of, **112, 210**.

E.

E-605 forte, **5**.
Earias (on cotton), in Swaziland, **407**; in Tanganyika, **164**; in Uganda, **43, 44**; sprays against, **44, 407**; review of data on, **502**.
Earias biplaga, spray-painting with DDT or BHC not protecting cacao from, in Nigeria, **212**.
Earias insulana, light-trap collections of, in Egypt, **29**; on cotton in Israel and Jordan, **419, 507**; bionomics and alternative food-plants of, **419**; insecticides against, **419, 507**.
Earwig, European (see *Forficula auricularia*).
ebriola, *Ctenomeristis*.
eccla, *Empoasca*.
Echinochloa pyramidalis, association of *Nomadacris septemfasciata* with, in Tanganyika, **370**.
Echinocnemus oryzae, bionomics of, on rice in India, **162, 163**.
Economic Entomology (see Entomology).
Ectemnius texanus ais, injury to rose by, in Florida, **490**; measures against, **490**.
Ecuador, Scolytids in stored maize and avocado seeds in, **98**.
eduardus, *Laurentius*.
Egg-plant, pests of, in India, **137, 345**; *Bemisia tabaci* on, in Israel, **418**; Tetranychids on, in Mauritius, **167**; *Pseudaulacaspis pentagona* on, in Trinidad, **268**; *Orosius argentatus* developing on, **477**; insecticides not injurious to, **471**.
Eggs, dieldrin in, from aldrin-fed hens, **99**.
Egypt, *Aphis gossypii* and tristeza disease of *Citrus* in, **506**; miscellaneous pests in, **24–28, 230**; beneficial insects in, **27**; virus disease of *Prodenia litura* in, **27**.
Egyptian Clover (see *Trifolium alexandrinum*).
Eiphosoma, establishment of, against Pyralids in Mauritius, **421**.
Eiphosoma annulatum, **421**.
Elachertus, parasite of *Dioryctria abietella* in Ontario, **316**.
Elachertus coxalis, parasite of *Parornix geminatella* in Virginia, **487**.
Elasmopalpus lignosellus, systemic insecticides ineffective against, on sorghum and soy bean in California, **425**; on sugar-cane in Venezuela, **452**.
Eldana saccharina, on cereals and sugar-cane in Uganda, **303**.
elegans, *Chaetospila*.
elegantissimus, *Cirrospilus*.
elegantula, *Nioro*.
elegantulus, *Cylas formicarius*.
Elenchus templetoni, parasite of Delphacids in Mauritius, **372**; not developing in *Perkinsiella saccharicida*, **372**.
Elenchus tenuicornis, parasite of *Delphacodes pellucida* in Finland, **405**.
Eleusine coracana, stalk borers on, in Uganda, **303, 304**.
elimatus, *Dalbulus*.
Elimite (see p-Chlorophenyl Benzenesulphonate).
Elm, Scolytids and *Ceratostomella ulmi* in, in Canada and U.S.A., **387, 483**; use of *Galerucella luteola* and, in experiments with BHC and Aroclor 5460, **185**.
elutella, *Ephestia*.
embryophagum, *Trichogramma*.
emmedonia, *Nephelodes*.
Empoasca, review of data on, on cotton in tropical Africa, **502**.
Empoasca canda, sp. n., distribution of, in America, **310**; on beans, **310**.
Empoasca eccla, sp. n., in Honduras and Panama, **310**.
Empoasca fabae (in U.S.A.), on leguminous plants, **220, 227, 228, 347**; on potato, etc., **347**; distribution and new members of complex of, **310**; overwintering and spring migration of, **347**; insecticides against, **227, 228**.
Empoasca hastosa, sp. n., distribution of, in America, **310**; on beans, **310**.
Empoasca kraemeri, sp. n., distribution of, in America, **310**; on beans and squash, **310**.
Empoasca lybica, spray drift affecting control of, on cotton in Sudan, **368**.
Empoasca mexara, sp. n., on lucerne in Mexico and Arizona, **310**.
Empoasca panisca, sp. n., in Cuba and Honduras, **310**.
Empoasca pteridis (on beet), in Poland, **80**; transmitting mosaic in Sweden, **80**.
Empoasca solana, on cotton in California, **424**; on beans in Hawaii, **214**; insecticide treatments against, **214, 424**.
Empoasca sundaica, on groundnuts in Java, **477**; Dryinids parasitising, **477**.

Empoasca verdia, sp. n., in Honduras and Mexico, **310.**
Empusa, as genus of fungi (see *Entomophthora*).
Enarmonia caryana, EPN against, on pecan in Mississippi, **350.**
Enarmonia nigricana (see *Cydia*).
Enarmonia pseudonectis (see *Cydia*).
Enarmonia ratzeburgiana, on spruce in Norway, **320.**
endocarpa, *Prays*.
Endoconidiophora fagacearum, causing oak wilt in West Virginia, **17**; Nitidulids transmitting, **17.**
Endopsylla, endoparasitic in Psyllids, **491.**
Endothion (2-(O,O-dimethyl phosphorothiolomethyl)-5-methoxy-4-pyrone), in sprays; against Aphids, **139**; against *Bryobia*, **139, 140**; against *Dasyneura brassicae*, **456.**
Endria inimica, bionomics and control of, in Rhode Island, **220, 236.**
Endrin, against *Aleurocanthus woglumi*, **73**; against Aphids, **139, 175, 185, 407, 430, 438**; against Coccids, **470, 486, 499**; against Mirids, **30, 107, 174, 211**; against other Hemiptera, **174, 185, 214**; against Curculionids, **48, 62, 184, 185, 219, 234, 428, 438, 441, 443, 450**; strains of *Anthonomus grandis* resistant to, **344, 346, 450**; against Elaterids, **178, 382**; against Lamellicorns, **55, 60, 99, 178**; against other Coleoptera, **91, 354**; against *Hylemyia cilicrura*, **178**; against Noctuids, **48, 49, 52, 92, 107, 153, 154, 164, 188, 206, 228, 354, 364, 388, 407, 420, 425, 438, 440, 443, 444, 474, 507**; against Pyralids, **56, 153, 186, 220, 351, 354**; against other Lepidoptera, **54, 55, 60, 61, 70, 71, 106, 131, 234, 256, 260, 299, 300, 438**; against Orthoptera, **107, 154**; against Thysanoptera, **214, 446, 478**; against mites, **74, 214, 441**; favouring infestation by mites, **507**; destroying beneficial insects, **175, 300**; Lepidoptera and their parasites not affected by use of, against orchard mice, **447, 487**; in baits, **206, 388**; in dusts, **30, 52, 55, 60, 92, 174, 228, 430, 438, 443, 444, 446, 499**; in granules, **56, 62, 99, 175, 220, 351**; in sprays, **48, 49, 52, 55, 60, 61, 71, 73, 74, 91, 106, 107, 131, 139, 153, 154, 164, 175, 178, 184, 185, 186, 188, 211, 214, 219, 220, 228, 234, 259, 299, 300, 351, 354, 364, 407, 420, 425, 428, 430, 438, 440, 441, 443, 444, 447, 470, 474, 478, 486, 487, 499, 507**; applied from aircraft, **71, 188, 299, 300**; application of, to tobacco buds, **228**; soil treatment with, **62, 178, 282, 499**; effect of, on soil micro-organisms, **156**; effect of weather on deposits of, **48**; residues of, on peaches, **234**; in milk of cows fed on treated hay, etc., **229, 230**; toxicity of, to fish, **277**; and Aroclor 5460, **60**; and DDT, **438**; and phosphorus insecticides, **60, 438, 443, 450, 507**; and sulphur, **438, 439.**
Endrosis lactella, in stored cereals in Oregon, **173.**
Engelmann Spruce (see *Picea engelmanni*).
Engytatus (see *Cyrtopeltis*).
Enicmus, water-trap detecting, in stored grain in Manitoba, **392.**
Ennomos quercinaria, parasites and disease of, on beech and hornbeam in Germany, **78.**
Enoclerus sphegeus, bionomics of, predacious on *Ips* spp. in Alberta, **333.**
Entedon leucogramma, parasite of *Scolytus rugulosus* in Germany, **202.**
Entomology, history of developments in, in Canada, **76**; bibliography of, in Finland, **280**; review of recent research on, **255**; books on (see under Reviews).
entomophagus, *Thyreophagus*.
Entomophthora, species of, infesting *Myzocallis maculata* in California and Asia, **491**; status and scope of, **492.**
Entomophthora coronata, **491.**
Entomophthora exitialis, sp. n., **491.**
Entomophthora ignobilis, sp. n., **491.**
Entomophthora (*Empusa*) *muscae*, infesting *Hylemyia coarctata* in Britain, **43.**
Entomophthora obscura, sp., n., **491.**
Entomophthora virulenta, sp. n., **491.**
Enzyme Systems, effects of insecticides on, **10, 96.** (See also Cholinesterase.)
Eodiatraea centrella (*Diatraea canella*), on sugar-cane in Trinidad and British Guiana, **134, 135, 356**; parasites of, **134, 135.**
Eotetranychus cucurbitacearum (see *Tetranychus cinnabarinus*).
Eotetranychus pomi, sp. n., on apple in Germany, **291, 292, 402, 403**; bionomics of, **291, 292**; predacious enemies of, **292, 402, 403**; sprays against, **292.**
Eotetranychus sexmaculatus, sprays against, on *Citrus* in California, **225**; as food for larvae of *Chrysopa lateralis*, **312.**
Eotetranychus suginamensis, on mulberry and oak in Japan, **153.**
Eotetranychus yumensis, sprays against, on *Citrus* in California, **225.**
Ephestia calidella, in stored dates in Libya, **297.**

Ephestia cautella, in stored products in West Africa and Libya, **150, 273, 297**; effect of reduced air pressure on eggs of, **476**; tests and use of pyrethrum against, **171, 273**; susceptibility of, to oil, **172**.
Ephestia elutella, tests of pyrethrum and oil against, **171, 172**.
Ephestia kühniella (see *Anagasta*).
Ephialtes, parasite of *Pammene rhediella* in Switzerland, **469**.
Ephialtes comstockii, parasite of Lepidoptera in Ontario, **315, 390**.
Ephialtes pictipes, **469**.
Epicauta fabricii, destroying egg-pods of grasshoppers in U.S.A., **308**.
Epicauta maculata, destroying egg-pods of grasshoppers in U.S.A., **308**.
Epicauta pensylvanica, toxicity of paraoxon to, **231**.
Epicauta puncticollis, destroying egg-pods of grasshoppers in U.S.A., **308**.
Epilachna chrysomelina, bionomics of, on cucurbits in Israel, **420**.
Epilachna philippinensis, insecticides against, on potato in Philippines, **354**.
Epilachna similis, parasites of, on rice in French Cameroons, **365**; outbreak and control of, on maize in Southern Rhodesia, **368**.
Epilachna varivestis, eradication of, in California, **188**; insecticides against, on beans and lima beans in Maryland, **227**; mortality of, at low temperatures, **235**; used in tests of sulphuryl-fluoride fumigation, **88**.
epilachnae, Tetrastichus.
Epilampsis tadici, parasite of *Phyllocnistis labyrinthella* in Norway, **243**.
Epipagis cancellalis, on rice in French Cameroons, **365**.
Epinotia aceriana (see *Gypsonoma*).
Epitrix cucumeris, thiodan against, **141**.
Epitrix hirtipennis, insecticides in transplant water against, on tobacco in Virginia, **223**.
Epitrix tuberis, on potato and tomato in U.S.A., **340**; seasonal abundance and wild food-plants of, **340**.
epius, Spalgis.
EPN (O-ethyl O-p-nitrophenyl phenylphosphonothioate), against *Cerococcus kalmiae*, **103**; against Cicadellids, **214, 337**; against Mirids, **107, 219**; against *Trialaurodes vaporariorum*, **214**; effect of, on Aphid infestations, **15**; against Curculionids, **84, 107, 219, 344, 443, 446, 450**; against Noctuids, **153, 154, 342, 354, 444**; against Pyralids, **14, 56, 153, 354**; against other Lepidoptera, **106, 107, 219, 350, 354**; against Orthoptera, **154**; toxicity of, to *Rhagoletis cingulata*, **217**; against Thysanoptera, **214, 446**; against mites, **50, 214, 261**; in dusts, **14, 15, 50, 344**; in granules, **56**; in sprays, **50, 84, 103, 106, 107, 153, 154, 214, 217, 219, 261, 337, 342, 350, 351, 443, 444, 446**; risk of, to fish, **154**; apple injured by, **84**; and DDT, **50, 443, 444**; and fungicides, **107, 337**; and malathion, **450**; and oil emulsion, **337**.
Epomphaloides (see *Tetrastichus*).
equestris, Merodon.
eremita, Conomorium.
Eretmocerus masii, parasite of *Bemisia tabaci* in Israel, **419**.
Eretmocerus serius (parasite of *Aleurocanthus woglumi*), erroneously recorded as introduced into Hawaii, **509**.
Ereynetes, on *Aphis maidis* in Kansas, **102**.
erichsonii, Laricobius; *Pristiphora*.
eridania, Laphygma (*Prodenia*).
Erigeron, Brevipalpus inornatus on, in Japan, **153**.
Eriobotrya japonica, Oligonychus spp. on, in Mauritius, **167**.
Eriocampoides (see *Caliroa*).
Eriococcus azaleae, bionomics and control of, on cranberry in Massachusetts, **103**.
Erioischia (see *Hylemyia*).
Eriophyes phloeocoptes (see *Aceria*).
Eriophyes pyri, demeton against, on pear in U.S.A., **448**.
Eriophyes ribis (see *Cecidophyes*).
Eriosoma lanigerum (on apple), in British Columbia, **480**; in California, **336**; in France, **139**; parasite of, **139**; sprays against, **139, 336, 480**.
Eritrea, *Myzocallis maculata* on lucerne in, **230**; Trogid destroying eggs of *Schistocerca gregaria* in, **410**.
Ernobius mollis, measures against, in pine timber in Queensland, **240**.
erratica, Notostira.
erudita, Temnoschoita.
Erysimum repandum, as food-plant of *Circulifer tenellus* in Idaho, **122**.
Erythrina, used for rearing *Anoplocnemis phasiana*, **137**.
Erythrina lithosperma, cacao mealybugs not transmitting swollen-shoot virus to, in Ceylon, **113**.
erythrocephala, Calliphora (see *C. vicina*).
Erythroneura comes, sprays against, on vines in New York, **337**.
Erythroneura tripunctula, on groundnuts in Java, **477**; Dryinids parasitising, **477**.
Estigmene acraea (in U.S.A.), on cotton, **221, 222, 449**; on lettuce and beet, **221**; bionomics of, and parasites of, **222**;

insecticides against, **221, 449;** insecticide-resistant strain of, **221.**
Ethiopia, *Myzocallis maculata* on lucerne in, **230;** *Schistocerca gregaria* in, **410, 504, 505;** Trogid destroying eggs of *S. gregaria* in, **410.**
ethiopicum, Trichogramma (*Xanthoatomus*).
Ethyl p-Chlorophenoxycyclopropane Carboxylate, tests of, as an insecticide, **38.**
Ethyl-DDD (1,1-bis(p-ethylphenyl)-2,2-dichloroethane), against Lepidoptera, **95, 100, 342, 420;** against other insects, **84, 174, 217, 349;** destroying natural enemies of orchard pests, **190;** in dusts, **95, 174;** in sprays, **84, 100, 190, 217, 342, 349, 420;** and malathion, **100, 349.**
Ethyl 4,4′-Dichlorobenzilate (see Chlorobenzilate).
N-(2-Ethylhexyl)bicyclo[2.2.1]-5-heptene-2,3-dicarboximide, as synergist with pyrethrins, **92.**
O-Ethyl O-p-Nitrophenyl Phenylphosphonothioate (see EPN).
Ethylene Chlorobromide, fumigation of strawberry plants with, against *Steneotarsonemus pallidus*, **355.**
Ethylene Dibromide, fumigation of strawberry plants with, against *Steneotarsonemus pallidus*, **355;** in formulations for treating trees and logs against *Dendroctonus pseudotsugae*, **218;** soil treatment with, against *Agriotes obscurus*, **480;** effect of, on soil micro-organisms, **156.**
Etiella zinckenella, on *Crotalaria juncea* in India, **161;** indigenous and introduced parasites of, on *Cajanus cajan* in Mauritius, **421.**
Eucalyptus, relation of *Coptotermes* spp. to, in W. Australia, **358;** *Paropsis dilatata* on, in New Zealand, **479, 480.**
Eucalyptus camaldulensis, use of, against *Nomadacris septemfasciata* in Tanganyika, **504.**
Eucalyptus marginata, Coptotermes michaelseni in timber of, in W. Australia, **358.**
Eucosma monitorana, infesting cones of *Pinus resinosa* in Ontario, **129, 390, 482;** bionomics and insect enemies of, **390;** competing with *Conophthorus resinosae*, **129.**
Eucosma ratzeburgiana (see *Enarmonia*).
Euetheola bidentata, on sugar-cane in Venezuela, **452.**
Euetheola humilis, on sugar-cane in Venezuela, **452.**
Eulecanium corni, on *Cotoneaster microphylla* in England, **25;** outbreak of, on walnut in France, **283, 284;** production of males and effect of bisexual reproduction in, **25;** not mating with *E. taxi*, **25;** natural enemies of, **284;** insecticides against, **284.**
Eulecanium taxi, sp. n., bionomics of, on *Taxus baccata* in England, **25;** not mating with *E. corni*, **25.**
Eulia sphaleropa, natural enemies of, on cotton in Peru, **454.**
Eulia velutinana (on apple in U.S.A.), development of resistance to DDD in, **445;** endrin sprays against mice not affecting overwintering stages or parasites of, **447;** other insecticides against, **445.**
Eulimneria (see *Campoplex*).
Eulophus, auct. (see *Pnigalio*).
euonymi, Unaspis.
Euonymus, Unaspis euonymi on, in Maryland, **97.**
Eupelmella pedatoria, parasite of *Diopsis thoracica* in French Cameroons, **30.**
Eupelmella vesicularis, hyperparasite of *Bruchus lentis* in Algeria, **112;** parasite of *Bruchophagus caraganae* in Canada, **189.**
Eupelmus cyaniceps, parasitising *Cydia molesta* in New Jersey, **237.**
Eupelmus limneriae, parasitising *Cydia molesta* in New Jersey, **237.**
Eupelmus popa, parasite of Cecidomyiids in Mysore and Ghana, **413.**
Eupelmus urozonus, parasite of *Pissodes notatus* in Italy, **362.**
Euphorbia, Orthezia on, in Grenadines, **136.**
euphorbiae, auct., *Macrosiphum* (see *M. solanifolii*).
Eupithecia togata mutata, reducing seed production of *Picea glauca* in Canada, **188.**
Euplectrus laphygmae, parasite of *Laphygma exigua* in French Cameroons, **365.**
Euproctis chrysorrhoea, experiments with diseases of *Hyphantria cunea* and, in Czechoslovakia, **289, 290;** in Yugoslavia, **3;** suitability of different foodplants for, **3.**
Euproctis flava, virus disease of, in Japan, **37.**
Euproctis pseudoconspersa, virus disease of, in Japan, **37.**
Eupteromalus nidulans, doubtful establishment of, against *Stilpnotia salicis* in Canada, **127.**

Eurinoscopus punctatus, not transmitting virus disease of *Trifolium subterraneum* in New South Wales, **31.**
European Chafer (see *Amphimallon majalis*).
European Corn Borer (see *Pyrausta nubilalis*).
European Earwig (see *Forficula auricularia*).
European House-borer (see *Hylotrupes bajulus*).
European Pine Shoot Moth (see *Rhyacionia buoliana*).
European Red Mite (see *Panonychus ulmi*).
European Spruce Sawfly (see *Gilpinia hercyniae*).
European Wireworm (see *Agriotes obscurus*).
Eurostus hilleri (see *Pseudeurostus*).
Eurygaster integriceps, distribution of, on cereals in Turkey, **364**; in U.S.S.R., **8—10, 285, 286**; bionomics and physiology of, **8—10, 286**; tests of insecticides against, **10, 285**; monograph on, **8.**
Euryophthalmus cinctus californicus, strain of *Trichopoda pennipes* parasitising, in California, **437.**
Eurytoma caraganae (see *Bruchophagus*).
Eurytoma diopsisi, parasite of *Diopsis collaris* in French Cameroons, **30.**
Eurytoma lepidopterae, hosts of, in French Cameroons, **30, 365.**
Eurytoma syleptae, hosts of, in French Cameroons, **365.**
Euscelis, relation of species of, to virus diseases of clover and other plants in Britain, **146.**
Euscelis bilobata, **146.**
Euscelis galiberti, **146.**
Euscelis lineolata, **146.**
Euscelis plebeja, **146**; transmitting virus disease of clover in Switzerland, **470.**
Euschistus spp., types of injury to peaches by, in Ohio, **434.**
Euspudaeus beneficus, sp. n., bionomics of, predacious on *Chilo suppressalis* in Japan, **276.**
Eutetranychus banksi, on date palm in Libya, **297**; on *Citrus*, etc., in Mauritius, **167.**
Euxoa nigricans, measures against, on beet in France, **205, 206.**
Euxoa ochrogaster, measures against, on asparagus in British Columbia, **388.**
Euxoa tritici var. *aquilina*, measures against, on beet in France, **205, 206.**
evanescens, Trichogramma.
exarator, Spathius.
excitans, Neodiprion.
exempta, Laphygma.
Exenterus claripennis, parasite of *Gilpinia hercyniae* in New Brunswick, **485.**
Exenterus vellicatus, parasite of *Gilpinia hercyniae* in New Brunswick, **485.**
exigua, Laphygma.
exitialis, Anomala.
exitiosa, Aegeria (*Sanninoidea*).
exitiosus, Nasutitermes.
Exochomus flavipes, predacious on *Quadraspidiotus perniciosus* in France, **395.**
Exochomus melanocephalus (*nigromaculatus*), predacious on cacao mealybugs in Ceylon, **112.**
Exochomus quadripustulatus, predacious on *Quadraspidiotus perniciosus* in France, **395.**
Exorista (see *Tachina*).
exsanguis, Zelus.

F.

fabae, Aphis (*Doralis*); *Empoasca.*
fabricii, Epicauta.
fagi, Agrilus viridis.
Fagus (see Beech).
fallacis, Typhlodromus.
fallax, Uropoda.
falli, Conoderus.
Fanweed (see *Thlaspi arvense*).
farinae, Tyroglyphus.
fasciatus, Dysdercus; *Oncopeltus*; *Trichomalus.*
fasciculata, Oncopera.
fasciculatus, Araecerus.
fascifrons, Macrosteles.
Feltiella, predacious on Tetranychids in Mauritius, **167.**
Feltiella tetranychi, **167.**
femoralis, Sympiesis.
femorata, Tiphia.
Fenson (see p-Chlorophenyl Benzenesulphonate).
Ferbam (see Ferric Dimethyldithiocarbamate).
ferevitrea, Chalioides.
Feronia madida, uptake of dust deposits by, **41.**
Ferric Dimethyldithiocarbamate, mites not affected by sprays of, **85**; DDT in spray mixture containing, **480.**
Ferrisiana (*Ferrisia*) *virgata*, not transmitting swollen-shoot virus of cacao in Ceylon, **112, 113**; experiments with strains of swollen-shoot and, in Ghana, **210.**
ferrugineus, Cryptolestes (*Laemophloeus*).
festiva, Agathis.
Festuca novae-zelandiae, insects on, in New Zealand, **359.**

Festuca rubra commutata, Cicadellids on, in Rhode Island, **236.**
ficus, Chrysomphalus; *Lepidosaphes.*
Fidicina mannifera, systemic insecticides not controlling, on *Ilex paraguensis* in Argentina, **118.**
fieberi, Oxycarenus.
Fieberiella florii, in California, **444, 445**; in Ontario, **388**; transmitting virus diseases of celery and peach, **388, 444, 445**; food-plants of, **388, 444, 445**; sprays against, **444.**
Fig, Coccids on, in Yugoslavia and U.S.A., **5, 179.**
Fig Scale (see *Lepidosaphes ficus*).
Fiji, *Aphis craccivora* in, **507**; *Oryctes rhinoceros* and its biological control in, **105, 106**; insects introduced into, against *Lantana camara*, **104**; carriage of insects in aircraft between New Zealand and, **158, 507.**
Finger Millet (see *Eleusine coracana*).
Finland, *Delphacodes pellucida* on cereals and grasses in, **405**; *Ceutorhynchus* spp. on crucifers in, **240**; weevils on *Trifolium* spp. in, **1, 361**; parasite of *D. pellucida* in, **405**; bibliography of entomology in, **280.**
fiorii, Pagiocerus.
fiscellaria, Lambdina.
Fish, effects of insecticides on, **154, 221, 277.**
Fish-oil Resin Soap, ineffective in dip for sorghum seedlings against *Atherigona indica*, **72.**
fitchii, Rhopalosiphum.
flaminius, Homalotylus.
flammea, Panolis.
flava, Cosmophila (*Anomis*); *Euproctis*; *Sipha.*
flaveolus, Anagrus.
flaviceps, Carneocephala; *Cybocephalus.*
flavicollis, Kalotermes.
flavifrons, Chrysopa.
flavilatera, Aeneolamia; *Sialis* (see *S. lutaria*).
flavipes, Apion (see *A. dichroum*); *Exochomus*; *Reticulitermes*; *Xylocoris.*
flavopicta, Ophiola.
flavovariatus, Apanteles.
flavus, Tychius.
fletcheri, Opius.
floccosus, Aleurothrixus.
Flooding, effects of: on larvae of *Melolontha hippocastani*, **401**; on *Psila rosae*, **316, 317.**
floricolus, Tarsonemus.
Florida, Aphids and virus diseases of *Capsicum* in, **15, 493**; *Panonychus citri* on orange in, **233**; *Dendroctonus terebrans* on pines in, **215**; Sphecid injuring rose in, **490**; Cicadellids and Pierce's disease of vines in, **494**; *Ceratitis capitata* in, **349, 350, 448**; new species of *Empoasca* in, **310**; miscellaneous pests in, **386.**
florii, Fieberiella.
Flour, techniques and results of studies of populations and control of Tyroglyphids in, **40, 41, 53, 54**; importance and rearing of *Ptinus villiger* in, **64, 65**; conditioning of, by *Tribolium confusum* reducing effectiveness of sodium fluoride, **442**; effect of extractives of, on bioassay of BHC, **39**; effect of injury to grain by *Nysius huttoni* on quality of, **372.**
Flour Mills, insects in, **42, 242, 243**; fumigation of, **242.**
p-Fluorobenzyl p-Fluorophenyl Sulphide, **272.**
fockeui, Vasates.
Fog Generators, types and use of, for distributing insecticides, **274, 457.**
Folidol, **73.**
Forest Pests, in East Africa, **240**; in Austria, **66**; in Belgium, **404**; in Britain, **142, 207, 361**; in Canada, **10, 11, 12, 85, 128, 129, 188, 265, 267, 269, 270, 314, 315, 316, 331, 332, 333, 347, 387, 390, 391, 466, 485**; in Czechoslovakia, **325, 398**; in France, **466**; in Germany, **66, 78, 140, 247, 302, 398, 460**; in Indonesia, **319**; in Italy, **362, 457**; in Ivory Coast, **274**; in Norway, **320**; in Queensland, **158**; in Spain, **294**; in Sweden, **141, 142**; in U.S.S.R., **68, 69**; in U.S.A., **17, 62, 125, 126, 218, 259, 263, 264, 265, 347, 385, 391, 425, 427, 431, 486, 488, 489**; in Yugoslavia, **2, 3, 288, 289, 397**; survey of viruses infecting, in Europe, **459**; review of measures against, **255.** (See also *Chermes* spp.)
Forest Tent Caterpillar (see *Malacosoma disstria*).
Forficula auricularia, **349**; bionomics of, in Britain, **37, 82**; injuring apples, **37.**
formicarius, Cylas.
formosa, Achrysocharis.
fornicata, Phytodecta.
fornicatus, Xyleborus.
Fowls, dieldrin in eggs of aldrin-fed, **99.**
fracta, Laelia.
fragaefolii, Capitophorus (*Pentatrichopus*).
Fragaria vesca, used in experiments with strawberry viruses, **146, 202.**
fragariae, Ancylis (see *A. comptana*).
fragile, Malacosoma.
France, *Choristoneura murinana* on *Abies alba* in, **466**; *Pseudonapomyza dianthicola* on carnation in, **283**; pests

of field and vegetable crops in, **38, 194, 205, 283, 361, 456**; *Thomasiniana lavandulae* on *Lavendula* spp. in, **206, 362**; orchard pests in, **6, 7, 77, 138, 139, 318, 394, 395**; strawberry Aphid in, **202**; *Eulecanium corni* on walnut in, **283, 284**; *Bryobia* spp. in, **318**; Melolonthids in, **7, 206, 279**; natural enemies of insect pests in, **139, 205, 279, 283, 284, 395, 466**; parasites of beneficial insects in, **283, 395, 466**; parasites of *Lepidosaphes* spp. introduced into California from, **180.**

frangulae, auct., *Aphis* (see *A. gossypii*).

Frankliniella, insecticide treatments against, on cotton in U.S.A., **91, 424, 436, 445, 446.**

Frankliniella tritici, in U.S.A., **94, 449**; tests of systemic insecticides against, on cotton, **183, 449**; insecticide-treated screens against, in rose greenhouses, **94.**

Frankliniella vaccinii, types of injury to blueberry by, in Canada, **193.**

fraterculus, *Anastrepha.*

freemani, *Carpophilus.*

frenchi, *Coptotermes*; *Lepidiota.*

freyella, *Argyresthia.*

frit, *Oscinella.*

frontalis, *Pagiocerus.*

frugiperda, *Laphygma.*

Fruit (Dried), pests in, **287, 297.**

Fruit-fly, Mediterranean (see *Ceratitis capitata*).

Fruit-fly, Oriental (see *Dacus dorsalis*).

Fruit-fly, Queensland (see *Dacus tryoni*).

Fruit-tree Mite (see *Panonychus ulmi*).

Fruitworm, Tomato (see *Heliothis zea*).

frumenti, *Diocalandra.*

frustalis, *Cremnops*; *Loxostege.*

fugitivus, *Hyposoter.*

fulva, *Rhadonycha.*

fumiferana, *Choristoneura.*

Fumigants, factors affecting physical toxicity of, **207.**

Fungi, Entomogenous, **43, 87, 124, 180, 211, 250, 278, 279, 280, 290, 328, 376, 377, 398, 441, 458, 468, 491, 501**; use of, **124, 279, 280, 328, 491.**

Fungi, Injurious, **106, 107, 119, 338, 339**; relation of insects to, **17, 22, 72, 274, 287, 306, 313, 371, 387, 409, 414, 442, 443, 483, 494.**

fur, *Ptinus.*

furcifera, *Phaneroptera.*

furvus, *Pediobius* (*Pleurotropis*).

fusca, *Busseola.*

fuscipennis, *Dahlbominus*; *Thrips.*

fuscipes, *Agonia*; *Lanelater* (*Agrypnus*).

fuscispinus, *Carpocoris pudicus.*

fuscus, *Caryedon* (*Caryoborus*, *Pachymerus*).

FW-152, **176.**

FW-293, **176, 261.**

G.

gahani, *Pseudococcus.*

galeopsidis, *Capitophorus* (*Cryptomyzus*).

Galeopsis, Aphids on, in Norway, **308.**

Galerucella birmanica, bionomics and control of, on *Trapa bispinosa* in India, **163.**

Galerucella luteola (*xanthomelaena*), tests of BHC and Aroclor 5460 against, on elm, **185.**

Galesus (see *Psilus*).

galiberti, *Euscelis.*

gallegonis, *Amblypelta.*

Galleria mellonella, not infected by virus from *Euproctis* spp. in Japan, **37**; experiments with *Trichogramma* spp. and, **399, 400.**

gamma, *Autographa* (*Phytometra*).

Gammalin 20, **209.**

Garden Chafer (see *Anomala horticola*).

Garlic, Eriophyids on, in U.S.A. and India, **18, 297.**

garouae, *Bruchobius*; *Dirhinus.*

Gegenes niso, parasites of, on rice in French Cameroons, **365.**

geisenheyneri, *Brevipalpus.*

gelechiae, *Bracon* (*Microbracon*).

Gelis, parasite and hyperparasite of *Parornix geminatella* in Virginia, **487.**

geminata, *Solenopsis.*

geminatella, *Parornix* (*Callisto*).

geminatus, *Colladonus.*

geniculatus, *Atrometus.*

Geniocerus (see *Tetrastichus*).

Genite (see 2,4-Dichlorophenyl Benzenesulphonate).

Genite-876 (see Bis(p-chlorophenyl)-ethynylcarbinol).

Genite-923 (see 2,4-Dichlorophenyl Benzenesulphonate).

Georgia (U.S.A.), pests of cucurbits in, **14, 15**; *Conotrachelus nenuphar* on peach in, **343.**

germanica, *Blattella.*

Germany, pests of crucifers in, **292, 293, 400, 401, 462**; pests of other field and vegetable crops in, **67, 79, 203, 248, 280**; forest pests in, **66, 78, 140, 195, 247, 302, 398, 460, 461**; orchard pests in, **2, 116, 194, 195, 202, 203, 291, 400, 402, 403, 460, 461**; pests of strawberry in, **195, 202**; *Dasyneura affinis* on violets in, **245**; *Melolontha melolontha* in, **204, 290**; insects and

virus diseases of plants in, **67, 116, 202, 248, 400**; natural enemies of pests in, **2, 78, 79, 140, 202, 203, 245, 246, 247, 292**, 293, 402, 403; diseases of noxious insects in, **78, 79, 290, 291**; books on pests in, **2, 116, 329**; *Ips cembrae* possibly introduced into Britain from, **143.**

Geron, parasite of *Saluria* in French Cameroons, **365.**

Gesarol 50, **142.**

Ghana, pests and virus disease of cacao in, **112, 163, 164, 209-212, 254, 417**; cereal pests in, **152, 172, 413**; Bruchid on *Voandzeia subterranea* in, **416**; ambrosia beetles infesting timber in, **408**; pests of stored products in, **42, 273**; beneficial insects in, **163, 164, 413.**

ghesquièrei, Habrochila.

Gibbium psylloides, susceptibility of, to pyrethrum in oil, **171.**

gibbosus, Ligyrus.

Gilpinia abieticola, bionomics of, on spruce in Germany, **195.**

Gilpinia hercyniae (on spruce), bionomics of, in Germany, **195, 196**; parasites and disease of, in New Brunswick, **485.**

Gilpinia polytoma, bionomics of, on spruce in Germany, **195.**

glabrum, Trogoderma.

Gladiolus, Taeniothrips simplex on, in Britain, **456**; *Merodon bombiformis* on, in Natal, **250.**

Glischrochilus spp., transmitting oak-wilt fungus in West Virginia, **17.**

globata, Brachymeria.

globulipes, Triclistus.

glomeratus, Apanteles.

Glomerella tucumanensis, Delphacids favouring, on sugar-cane in Mauritius, **371.**

Glossina palpalis, effect of temperature on permeability of cuticle of, **83.**

Glucose (see Dextrose).

Glyodin (2-heptadecyl glyoxalidine acetate), effect of sprays of, on injurious and beneficial mites, **85, 261, 481**; ryania in sprays containing, **480, 481.**

Glypta spp., parasitising *Choristoneura murinana* in France, **466**; parasites of, **466.**

Gnathocerus cornutus, susceptibility of, to pyrethrum and oil, **171, 172.**

Gnathocerus maxillosus, in grain-moving equipment in Venezuela, **452.**

Gnathotrichus materiarius, infesting wind-thrown softwoods in New York, **126.**

Gnathotrichus retusus, in logs in British Columbia, **265.**

Gnathotrichus sulcatus, types and identification of injury by, in logs in British Columbia, **183, 184, 265.**

Gnetum gnemon, new Mirid on, in West Java, **318.**

Gnorimoschema ocellatella (on beet), in Bulgaria, **328**; in U.S.S.R. and Rumania, **80.**

Gnorimoschema operculella (Potato Tuber Moth), parasites and biological control of, in India, **13, 474**; influence of adult food on fecundity of, **459.**

Gold Coast (see Ghana).

goldingi, Bemisia (see *B. tabaci*).

goliath, Macrotermes.

gonagra, Caryedon (*Caryoborus, Pachymerus*).

Gonatocerus africanus (see *Lymaenon*).

Gonaxis kibweziensis, introduced predator of *Achatina fulica* in Guam, **103**; not attacked by *Lamprophorus tenebrosus*, **103.**

Goniozus, parasite of *Cryptophlebia williamsi* in Mauritius, **421.**

Goniozus platynotae, parasite of *Platynota stultana* in California, **383**; parasite of, **383.**

Goniozus procerae, parasite of rice stemborers in French Cameroons, **365.**

Gorse (see *Ulex europaeus*).

Gorse Seed Weevil (see *Apion ulicis*).

gossypiella, Platyedra (*Pectinophora*).

gossypii, Aphis.

gossypiperda, Bemisia (see *B. tabaci*).

Gossypium (see Cotton).

gracilis, Dacnusa.

Gracillaria syringella, bionomics, parasites and control of, on *Syringa* spp. in U.S.S.R., **243, 244.**

Gram (see *Cicer arietinum*).

graminea, Parorphula.

Graminella nigrifrons, bionomics of, in Rhode Island, **220, 236**; sprays against, **236.**

graminis, Antonina.

graminum, Scaptomyza; *Toxoptera* (*Schizaphis*).

granaria, Calandra (*Sitophilus*).

granarium, Macrosiphum (see *M. avenae*); *Trogoderma.*

grandiosella, Zeadiatraea (*Diatraea*).

grandis, Anthonomus.

Granular Insecticides, machines for applying, **57.**

Grape Berry Moth (see *Paralobesia viteana*).

Grapefruit, *Brevipalpus lewisi* on, in U.S.A., **429**; retardation of development of *Aonidiella aurantii* on, **393**; *Ceratitis capitata* in imported fruits of, in France, **7.**

Grapholitha (see *Cydia*).
grapholithae, Phanerotoma.
Grass, Napier (see *Pennisetum purpureum*).
Grass, Rhodes (see *Chloris gayana*).
Grass, Timothy (see *Phleum pratense*).
Grass Scale, Rhodes (see *Antonina graminis*).
Grasses, pests of, in Australia, **75, 239, 378;** Cicadellids on, in Britain, **146;** pests of, in New Zealand, **257, 258, 359, 360;** pests of, in U.S.A., **177, 220, 236;** types of, in habitats of *Nomadacris septemfasciata*, **369, 370;** cereal or sugar-cane pests on, **10, 29, 74, 102, 119, 120, 122, 303, 368, 405, 452, 453;** susceptibility of, to mite-transmitted wheat spot mosaic, **492;** effect of chlordane on species of, **231.** (See Turf.)
Grasshoppers, in French West Africa, **407;** in India, **473;** in New South Wales, **411, 412;** in Saskatchewan, **193;** in U.S.A., **18, 228, 248, 308;** Russian bibliography of, **360;** book on, in Uruguay, **406;** transmitting virus diseases of plants, **18, 248;** predacious insects destroying egg pods of, **308;** climatic factors affecting, **193, 370, 371;** mortality of, at low temperatures, **235;** insecticides against, **228, 406, 411, 412, 473.**
Great Basin Wireworm (see *Ctenicera pruinina noxia*).
Greece, *Dacus oleae* on olive in, **467.**
Greenbug (see *Toxoptera graminum*).
gregaria, Schistocerca.
grenadensis, Ipobracon.
Grenadines, new Chamaemyiid predacious on *Orthezia* in, **136.**
Ground-cherry (see *Physalis*).
Groundnut Cake, effect of manuring with, on *Atherigona indica* and sorghum, **72.**
Groundnut Oil, affecting bioassay of BHC, **39.**
Groundnuts, strain of *Dysmicoccus brevipes* on, in Ghana, **210;** insects and virus diseases of, in Java, **477;** *Tetranychus marianae* on, in Mauritius, **167.**
Groundnuts (Stored), studies of identity and development of Bruchid infesting, **114, 304, 305;** other pests in, **42, 132, 133, 150, 273;** fumigation of, with methyl bromide, **132, 133, 273;** as food for *Oncopeltus fasciatus*, **233.**
Gryllus domesticus (see *Acheta*).
Guadeloupe, sugar-cane pests in, **135;** parasites of *Diatraea saccharalis* in, **135.**
Guam, introduced natural enemies of *Achatina fulica* in, **103;** lists of recently observed insect pests and introduced parasites and predators in, **116.**
Guava, *Brevipalpus australis* on, in Egypt, **28;** *Dacus dorsalis* on, in Hawaii, **90;** *Saissetia setigera* on, in Uganda, **299.**
Guiana, British, Pentatomids on rice in, **119-121;** sugar-cane moth-borers in, **356;** *Aeneolamia flavilatera* in, **453;** beneficial insects and biological control in, **120, 356.**
Guiana, Dutch, coconut pests in, **406;** *Pseudaulacaspis pentagona* on papaya in, **318;** insects predacious on *P. pentagona* in, **318.**
Guisardus guttatus, sp. n., bionomics of, on *Gnetum gnemon* in Java, **318, 319;** parasites and control of, **319.**
Gulf Wireworm (see *Conoderus amplicollis*).
Gusathion or Guthion (see O,O-Dimethyl S-(4-Oxo-benzotriazino-3-methyl) Phosphorodithioate).
guttatus, Guisardus.
Gypsonoma aceriana, bionomics and control of, on poplar in Holland, **284.**
Gyrohypnus, predacious on *Hylastes obscurus* in Quebec, **313.**
Gyrohypnus hamatus, **313.**

H.

Habracon (see *Bracon*).
Habrochila ghesquièrei, insecticides against, on coffee in Belgian Congo, **151, 152;** DDT favouring infestation by, **151.**
Habrocytus, parasite of *Bruchophagus caraganae* in Canada, **189;** parasite of *Ceutorhynchus assimilis* in Idaho, **382.**
Habrolepis rouxi, effect of food-plant of *Aonidiella aurantii* on development of, **393.**
haemorrhagica, Cicindela.
haemorrhoidalis, Heliothrips.
Haiti, probable introduction of parasite of *Aleurocanthus woglumi* into, **509.**
Halictophagus compactus, parasite of *Pyrilla perpusilla* in India, **422;** not surviving in hosts parasitised by *Dryinus pyrillae*, **422.**
Hall, Dr. W. J., retirement of, **197.**
Halotydeus destructor, in pastures in Australia, **32, 75, 277;** apparatus for sampling, **75;** insecticides against, **32, 277.**
Halowax, treatment of wood with, against termites, **199.**
halterata, Megaselia.
Halticoptera patellana, parasite of *Pseudonapomyza dianthicola* in France, **283.**

hamatus, Gyrohypnus.
Hanane, **34.**
Harpalus, attacking wireworms in Nova Scotia, **11.**
Harrisina brillians, parasites and disease of, on vines in California, **86, 87.**
harrisinae, Apanteles; *Sturmia.*
harti, Petrobia.
hastosa, Empoasca.
havilandi, Cryptotermes.
Hawaii, fruit-flies in, **90, 91, 349, 446, 507**; other pests in, **74, 103, 104, 173, 214**; tests of wood preservatives against termites in, **199**; beneficial insects in, **90, 104**; virus diseases of Noctuids in, **173**; part of a manual on insects of, **360**; *Aleurocanthus woglumi* erroneously recorded in, **509.**
hawaiiensis, Pristomerus.
Hawthorn (see *Crataegus*).
Heat (see Water, Hot).
hebetor, Bracon (*Microbracon*).
Hecistopsilus molitor, on tobacco in S. Rhodesia, **408**; adult habits of, **408.**
hederae, Aspidiotus.
Helianthus annuus (see Sunflower).
helichrysi, Brachycaudus (see *Anuraphis padi*).
Helicopter, used to locate breeding foci of *Laphygma frugiperda*, **453.**
heliopae, Chelonus.
Heliothis armigera, light-trap collections of, in Egypt, **29**; in New South Wales, **322**; in Philippines, **107, 154, 354**; in Sudan, **109, 455**; in Swaziland, **407**; in Tanganyika, **44, 164, 165**; in Uganda, **43, 44, 198, 455**; on beans and peas, **322**; on cotton, **43, 44, 109, 164, 165, 198, 407, 502**; on maize, **354**; on tobacco, **107, 154, 354**; virus disease of, **198, 455**; insecticides against, **44, 107, 109, 154, 164, 165, 322, 354, 407**; treatments favouring infestation by, **322**; survey of data on, **502**; *Adisura atkinsoni* probably recorded as, **472.**
Heliothis obsoleta, auct. (see *H. armigera*).
Heliothis virescens, on tobacco in North Carolina, **217, 227, 228**; *Bacillus thuringiensis* ineffective against, **217**; methods of applying insecticides against, **227, 228.**
Heliothis zea, in Ontario, **266, 389**; in U.S.A., **50, 51, 52, 55, 60, 61, 62, 95, 101, 122, 123, 187, 227, 351, 385, 425, 438, 443, 444, 449**; on cotton, **51, 52, 60, 61, 95, 438, 443, 444, 449**; on maize, **55, 61, 62, 101, 122, 351, 385**; lethal factor and resistance to, in inbred and hybrid varieties of maize, **101, 122, 123**; apparatus for measuring injury to maize ears by, **236**; on sorghum, **187, 425**; on tobacco, **227**; on tomato, **50, 227, 266, 389**; contamination of processed tomatos by, **266**; factors affecting oviposition by, **385, 490**; insecticides against, **50, 51, 52, 55, 60, 61, 187, 227, 389, 425, 438, 443, 444**; not affected by systemic insecticides, **449**; effect of soil insecticides and ants on pupation and subsequent development of, **449.**
Heliothrips haemorrhoidalis, in glasshouses in Britain, **456**; used in tests of systemic insecticides, **46, 183.**
Helopeltis, survey of data on, on cotton in tropical Africa, **502.**
Helopeltis bakeri, sprays against, on cacao in Philippines, **107, 354.**
Helopeltis bergrothi, sprays against, on cacao in French Cameroons, **254.**
Helopeltis ceylonensis, insecticides against, on cacao in Ceylon, **30.**
Helopeltis collaris, sprays against, on cacao in Philippines, **107, 354.**
helvolus, Aphycus (*Metaphycus*).
Hemerocampa oslari, in Colorado, **385**; *H. pseudotsugata* recorded as, in California, **384, 385.**
Hemerocampa pseudotsugata, on *Pseudotsuga menziesii* and *Abies* in U.S.A., **385.**
hemerocampae, Tritneptis.
hemipterus, Carpophilus; *Metamasius.*
Hemisarcoptes malus, destroying *Parlatoria blanchardii* in Morocco, **296.**
Hemitarsonemus latus, in Belgian Congo, **45**; in Hawaii, **74, 214**; in Mauritius, **167**; in Queensland, **259**; on cotton, **45**; on fruit trees, **167**; on *Jasminum sambac*, **74**; on vegetables, **167, 214, 259**; dusts against, **45**; sprays against, **45, 214, 259**; characters of, **74.**
Hemiteles albipalpus, hyperparasite of *Choristoneura murinana* in France, **466.**
Hemiteles areator, hyperparasite of *Choristoneura murinana* in France, **466.**
Hemitrama bykovi, on wheat in Turkey, **152.**
Hemlock, Western (see *Tsuga heterophylla*).
Hemlock Looper (see *Lambdina fiscellaria*).
Hemlock Looper, Western (see *Lambdina fiscellaria lugubrosa*).
Hemp, *Mordellistena parvula* on, in Bulgaria, **328.**
Heptachlor, against Curculionids, **48, 181, 184, 185, 187, 234, 343, 344, 428, 430, 438, 441**; strain of *Anthonomus grandis* resistant to, **344**; against Elaterids, **38, 63, 130, 178, 187, 271, 282, 451, 480**; strain of *Conoderus falli*

resistant to, **63**; against other Coleoptera, **49, 55, 56, 91, 216, 223, 235, 349**; against *Hylemyia* spp., **98, 178, 271, 430, 431, 434**; against other Diptera, **123, 124, 434, 464, 465**; against Hemiptera, **185, 187, 211, 214, 228, 254**; ineffective against *Macrosiphum pisum*, **185**; against Noctuids, **49, 425, 438, 440, 449**; against other Lepidoptera, **56, 234, 351**; against *Reticulitermes flavipes*, **226**; against Thysanoptera, **94, 95, 214, 349**; against *Vasates lycopersici*, **50**; laboratory tests of toxicity of, to insects, **55, 63, 174, 217, 237, 344**; in dusts, **38, 50, 98, 174, 271, 343, 344, 438, 480**; in granules, **49, 56, 91, 98, 124, 130, 178, 181, 185, 187, 235, 343, 351, 428, 430, 434, 441, 480**; in sprays, **48, 49, 50, 56, 91, 98, 130, 178, 181, 184, 187, 211, 214, 217, 228, 234, 235, 254, 271, 349, 425, 428, 430, 434, 440, 441, 449**; effect of weather on spray deposits of, **48**; applied from aircraft, **425**; soil treatment with, **38, 49, 63, 98, 123, 124, 130, 181, 187, 216, 223, 226, 235, 282, 343, 430, 431, 434, 449, 480**; applied in fertiliser, **49, 91, 123**; effect of type of soil on, **98**; persistence of, in soil, **187, 216, 226**; seed treatment with, **93, 431, 451**; in dips for seedlings or bulbs, **271, 431, 464, 465**; cloth impregnated with, for screening greenhouses, **94, 95**; effect of, on plants, **123, 124, 271**; residues of, on peaches, **234**; oxidised and stored as heptachlor epoxide in mammals, **99**; residues of, in pigs from treated pasture, **100**; and BHC, **428**; and DDT, **228, 344**; and malathion, **349**; and sulphur, **438**; compatibility of organic fungicides with, **93**.

Heptachlor Epoxide, heptachlor oxidised to, in mammals, **99**.

2-Heptadecyl Glyoxalidine Acetate (see Glyodin).

Hercules AC-528 (see 2,3-p-Dioxandithiol S,S-Bis(O,O-diethyl phosphorodithioate)).

hercyniae, Gilpinia (*Diprion*).

hesperia, Amara.

hesperiaris, Aegiale (*Acentrocneme*).

hesperidum, Coccus.

hesperus, Lygus; *Reticulitermes*.

Hessian Fly (see *Mayetiola destructor*).

Heteronychus, on rice in French Cameroons, **365**.

Heteronychus sanctae-helenae, new bacterium infecting, in Australia, **158, 191**; experiments with varieties of *Bacillus lentimorbus* and, **191**.

hetricki, Neodiprion.

Hevea brasiliensis, Amblypelta spp. on, in New Guinea, **412**.

1, 4, 5, 6, 7, 7 - Hexachloro - 2, 3 - bis(hydroxymethyl)bicyclo(2.2.1) - heptene - 5 (see Thiodan Alcohol).

6, 7, 8, 9, 10, 10 - Hexachloro - 1, 5, 5a, 6, 9, 9a - hexahydro - 6, 9 - methano - 2, 4, 3 - benzodioxathiepin-3-oxide (see Thiodan).

Hexamermis, infesting *Gnorimoschema operculella* in India, **474, 475**.

hibisci, Bemisia (see *B. tabaci*).

Hibiscus, Earias insulana on, in Israel, **419**.

Hibiscus cannabinus, weevil on, in Chad Territory, **408**; *Oxycarenus rufiventris* on, in Uganda, **502**.

Hibiscus esculentus, experiments with *Bemisia tabaci* and virus diseases of pumpkin and, in India, **275**; Tetranychid on, in Mauritius, **167**; *Platyedra gossypiella* on, in Texas, **441**; malathion residues on, **232, 233**.

Hibiscus syriacus, Platyedra gossypiella on, in Texas, **441**.

Hieracium, insects favouring, in grassland in Nova Scotia, **483**.

Hieroglyphus nigrorepletus, on sorghum in India, **101**; tests of toxicity of insecticides to, **101**.

higginsi, Platynaspis.

hilare, Acrosternum.

hilleri, Pseudeurostus (*Eurostus*).

hippocastani, Melolontha.

Hippodamia convergens, predacious on *Oligonychus pratensis* in Texas, **311**.

hirsutus, Aphoebantus.

hirtellus, Ptinus (see *P. clavipes*).

hirtipennis, Epitrix.

hispidulus, Sitona.

Hofmannophila pseudospretella, damaging lead of telephone cables in British Columbia, **270**; in stored cereals, **270**.

Holcocera immaculella, predacious on *Conophthorus resinosae* in Ontario, **129**.

Holcocera pulverea, predacious on *Laccifer lacca* in India, **324**; parasites of, **324**.

Holcomb 326 (see O,O-Diisopropyl N,N-Diethylthiocarbamyl Phosphorodithioate).

Holcostethus limbolarius, causing catfacing of peaches in Ohio, **434**.

Holland, *Panonychus ulmi* on apple in, **463**; *Gypsonoma aceriana* on poplar in, **284**; pests of vegetable and field crops in, **196, 329, 330, 331, 455**; strawberry Aphid in, **202**; Aphids and viru

diseases of plants in, **330, 455**; occurrence and use of parasite of stored-product beetles in, **284, 285**.
Holly, American (see *Ilex opaca*).
Hololepta, introduced into Fiji against *Oryctes rhinoceros*, **105**.
hololeucus, Niptus.
Homalodisca, species of, transmitting Pierce's virus of vines in Florida, **494**.
Homalodisca insolita, **494**.
Homalodisca triquetra, **494**; sprays against, on *Agave fourcroides* in Mexico, **279**; bacteria and fungi favoured by, **279**.
Homalotylus flaminius, parasite of Coccinellids in France, **395**.
Honduras, new Cicadellids in, **310**.
Honey, used alone or in mixtures for feeding insects, **26, 43, 61, 302, 316, 358, 383, 459**.
Hop Aphis (see *Phorodon humuli*).
Hops, survey of pests and diseases of, in England, **114, 115**; *Tetranychus kanzawai* on, in Japan, **153**.
Horismenus microgaster, hyperparasite of *Parornix geminatella* in Virginia, **487**.
Hornbeam, *Lymantria dispar* on, in Azerbaijan S.S.R., **68**; *Ennomos quercinaria* on, in Germany, **78**; experiments with, as food-plant for *L. dispar* and *Hyphantria cunea* in Yugoslavia, **3**.
Horogenes (see *Angitia*).
Hortensia similis, on sugar-cane in Guadeloupe, **135**.
hortensis, Bourletiella.
horticola, Anomala (*Phyllopertha*).
House Longhorn Beetle (see *Hylotrupes bajulus*).
House Moth, Brown (see *Hofmannophila pseudospretella*).
House-fly (see *Musca domestica*).
howardi, Diabrotica undecimpunctata.
howitti, Aphodius.
Humidity, effects of: on locusts, **369, 370**; on other insects, **24, 25, 64, 65, 159, 160, 246, 251, 252, 264, 287, 294, 432, 459**; on mites, **41, 224, 287**; on polyhedral disease of *Lymantria dispar*, **431**; on toxicity of malathion, **473**.
humilis, Euetheola; *Iridomyrmex*.
humuli, Phorodon.
Hungary, outbreak and parasite of *Theresimima ampelophaga* on vines in, **457, 458**; Scoliids parasitising Lamellicorn larvae in, **67, 68**.
hunteri, Tetrastichus.
huttoni, Nysius.
Hyalopterus pruni, sprays against, on plum in France and U.S.S.R., **139, 285**.
Hydrogen Cyanide (as a fumigant), against *Orthesia insignis*, **28**; against *Trogoderma* in stored grain, **334**; effect of fumigation techniques on action of, on *Calandra* spp., **170**; comparison of effects of sprays and, on *Citrus* fruits, **182**; generation of, from sodium cyanide, **28**.
Hydrogen-ion Concentration, effect of, on hatching of eggs of *Zenillia caesar*, **192**.
Hydroxylamine, use of, in experiments with virus diseases of Lepidoptera, **431**.
hylas, Platytelenomus.
Hylastes ater, on pine in England, **207**; reaction of, to α-pinene, **207**.
Hylastes obscurus (on clover), in Ohio, **216**; bionomics and natural enemies of, in Quebec, **313**; transmitting fungus diseases of clover, **313**; insecticides against, **216, 313**.
Hylastes palliatus, on pine in England, **207**; reaction of, to α-pinene, **207**.
Hylastes rufipes, vector of Dutch elm disease in Canada and U.S.A., **387, 483**; bionomics of, **483**; measures against, **387**.
Hylastinus (see *Hylastes*).
Hylemyia anthracina, reducing seed production of *Picea glauca* in Canada, **188**.
Hylemyia antiqua (Onion Fly), in Britain, **305**; in Canada, **130, 389**; in France, **283**; in Idaho, **430**; bionomics of, **283, 305**; stages of development of onion, leek and shallot in relation to, **283**; Anthomyiid predacious on, **130**; insecticide treatments against, **141, 389, 430**.
Hylemyia brassicae (on crucifers), in Britain, **305**; in Canada, **98, 191, 270**; in Czechoslovakia, **325, 326**; bionomics of, **270, 305, 325, 326**; natural enemies of, **191, 326**; insecticide treatments against, **98, 141, 270**; apparatus for removing puparia of, from soil, **22**.
Hylemyia cilicrura, insecticides against, on turnip and spinach in U.S.A., **178, 434**.
Hylemyia coarctata (on wheat in England), bionomics of, **43, 168-170, 302**; natural enemies of, **43**; influence of cultural practices on, **169, 170, 465**; estimation of crop losses caused by, **465**; laboratory rearing of, **42, 43**.
Hylesinus vestitus, bionomics and control of, on pistachio in Syria, **238**.
Hylobius abietis, uses of insecticides against, on conifers in Sweden and Britain, **141, 142, 361**.

Hylobius piceus, bionomics of, on conifers in Sweden, **142**; *Platysoma oblongum* predacious on, **142**.
Hylotrupes bajulus, in South Africa, **251**; bionomics and nutritional requirements of, **118, 251, 252**.
Hylurgopinus (see *Hylastes*).
Hylurgops (see *Hylastes*).
Hymenachne amplexicaulis, *Solubea poecila* on, in British Guiana, **119, 120**.
Hymenia recurvalis, found in New Zealand in aircraft from Pacific Is., **158**.
Hymenoptera, supplement to catalogue of North American, **509**.
hyoscyami, Pegomyia.
Hypera meles, insecticides controlling, on clover in West Virginia, **187**.
Hypera nigrirostris (on clover), bionomics of, in Finland, **1**; insecticides controlling, in West Virginia, **187**.
Hypera postica (see *H. variabilis*).
Hypera variabilis (on lucerne), bionomics and natural enemies of, in Poland, **458**; insecticides against, in U.S.A., **184, 185, 428, 430**.
Hyperchalcidia soudanensis, parasite of Psychid in French Cameroons, **30, 365**.
hyphaeniacus, Pseudaspidoproctus.
Hyphantria cunea, on fruit trees, etc., in Czechoslovakia, **289**; in Yugoslavia, **3, 288**; food-plants and climate in relation to outbreaks of, **3**; isolation and use of new *Thelohania* infecting, **289**; experiments with diseases of other Lepidoptera and, **37, 289**; development of *Trichogramma evanescens* in eggs of, **288**.
Hyponomeuta padellus malinellus, bionomics and natural enemies of, on apple in Bulgaria, **117**; new *Thelohania* infecting, in Czechoslovakia, **289**.
Hypopteromalus tabacum, hyperparasite of *Parornix geminatella* in Virginia, **487**.
Hyposoter fugitivus pacificus, parasite of *Malacosoma* in U.S.A., **384**; parasite of, **384**.
Hyssopus rhyacioniae, parasite of *Dioryctria cambiicola* in Ontario, **316**.

I.

Icerya purchasi, on date palm in Morocco, **297**.
Ichneumon, parasite of *Dioryctria disclusa* in Ontario, **315**.
ichneumonea, Diopsis.
Idaho, *Dendroctonus* spp. on conifers in, **218, 263**; pests of field and vegetable crops in, **382, 426, 430**; wild food-plants of *Circulifer tenellus* in, **122**; parasite of *Ceutorhynchus assimilis* in, **382**.
Ilex opaca, *Phytomyza ilicicola* on, in Maryland, **97**.
Ilex paraguensis, *Fidicina mannifera* on, in Argentina, **118**.
ilicicola, Phytomyza.
ilicis, auct., *Phytomyza* (see *P. ilicicola*).
illepida, Cryptophlebia.
Illinois, pests of maize in, **61, 449**; Aphids and virus disease of other cereals in, **19**; orchard pests in, **59, 234**; form of *Bryobia praetiosa* invading houses in, **177**; natural enemies of pests in, **47, 449**.
immaculella, Holcocera.
immigrans, Drosophila.
imperfecta, Cicindela pusilla.
impersonatella, Diatraea.
impexus, Scymnus (*Pullus*).
incertulas, Schoenobius.
inclusum, Trogoderma.
inconsequens, Taeniothrips.
inconspicua, Bemisia (see *B. tabaci*); *Sturmia*.
India, cereal pests in, **72, 101, 162, 163, 186, 413, 474**; coconut pests in, **36**; cotton pests in, **137, 473**; *Brithys crini* on *Crinum* spp. in, **422**; fruit pests in, **163, 470, 475**; Eriophyid on garlic in, **297**; pests of leguminous plants in, **161, 297, 472, 474, 475, 491**; *Agonia fuscipes* on *Pandanus* in, **323**; sugar-cane pests in, **160, 163, 421, 422, 472**; tea pests in, **113, 114**; *Lema* spp. on turmeric in, **345**; pests of other crops in, **13, 136, 137, 163, 474**; *Bemisia tabaci* and virus diseases of *Hibiscus* and pumpkin in, **275**; locusts and grasshoppers in, **101, 160, 162, 363, 410, 471, 473**; pests of stored products in, **208, 473, 474**; *Holcocera pulverea* predacious on *Laccifer lacca* in, **324**; natural enemies of noxious insects in, **13, 136, 324, 410, 413, 421, 422, 471, 474**; *Bacillus thuringiensis* infecting *Adisura atkinsoni* in, **472**; new fungus infesting *Myzocallis maculata* in, **491**; beneficial insects introduced into U.S.A. and Mexico from, **136, 353**; pests in stored products imported into America from, **132, 338**.
Indiana, pests of maize in, **350**; orchard pests in, **59, 234**; sawfly on *Pinus taeda* in, **265**.
indica, Atherigona; *Dusmetia*; *Margaronia*; *Raoiella*.

indicus, Oecanthus.
indifferens, Rhagoletis cingulata.
Indigofera, virus disease infecting, in Queensland, **31.**
Indonesia, *Amblypelta lutescens* in, **412;** termites in, **319, 503;** pests of vegetables in, **159, 318, 477;** insects and virus diseases of groundnuts in, **477;** parasites of noxious insects in, **319, 477, 478;** introductions of *Teleonemia scrupulosa* against *Lantana* in, **159;** books on plant-quarantine work and on pests of crop plants in, **73, 380.**
inferens, Sesamia; Sturmiopsis.
infuscatella, Chilotraea.
inimica, Endria; Xenotracheliella.
inornatus, Brevipalpus.
Insect Cuticle, techniques for studies of effects of insecticides on, **508.**
Insect Specimens, methods of preserving and mounting, **138, 196.**
Insecticides, tests of organic compounds as potential, **38, 46, 141, 271–273, 285, 346, 380–382;** experiments with systemic, **46, 91, 92, 97, 145, 174, 177, 182, 183, 222, 228, 285, 286, 348, 423–425, 435, 436, 449, 450, 451, 463, 464, 496, 499;** books on techniques for laboratory testing of, **23, 508;** procedure for evaluating effect of, on flavour of fruits and vegetables, **184;** reviews of recent works on, **255.**
Insects, study of chemical aspects of environment of, **199;** book on collecting and studying, **138;** use of polyethylene bags for inactivating, in sweep nets, **355;** techniques for studying effects of chemicals on physiology of, **508;** apparatus for injection of liquids into, **16;** bulletin on beneficial, **282;** list of popular names of, in Britain, **156.**
inserens, Isostasius.
insidiosa, Pentilia.
insidiosus, Orius.
insignis, Orthezia.
insolita, Homalodisca.
instigator, Pimpla.
insulana, Earias.
insularis, Neodiprion.
intacta, Scirpophaga nivella.
integriceps, Eurygaster.
intermedius, Schedorhinotermes (*Rhinotermes*).
interpunctella, Plodia.
interstitialis, Scyphophorus.
intricata, Oncopera.
p-Iodobenzyl p-Iodophenyl Sulphide, **272.**
Iowa, *Dioryctria disclusa* in, **315;** *Pyrausta nubilalis* on maize in, **56, 94;** *Perezia pyraustae* in *Pyrausta nubilalis* in, **440;** new Nitidulid in maize spillage in, **66.**
Ipobracon grenadensis, parasite of *Diatraea saccharalis* in British Guiana, **356.**
ipomaeae, Schizura.
Ipomoea batatas (see Sweet Potato).
Ipomoea palmata, Orthezia insignis on, in Egypt, **27.**
Ips cembrae, on larch in Britain, **142, 143.**
Ips confusus, on *Pinus ponderosa* in U.S.A., **427;** toxicity of insecticides to, **427.**
Ips perroti, natural enemies of, in pine slash in Alberta, **269, 333.**
Ips pini, natural enemies of, in pine slash in Alberta, **269, 333.**
Ips typographus, study of outbreak of, on spruce in Germany, **460.**
Iraq, Braconid and fungus parasites of *Myzocallis maculata* in, **230, 231, 491.**
Iridomyrmex humilis, insecticides against, in Western Australia, **32, 33;** map of distribution of, **509.**
isaea, Solenotus.
Isodrin, against Coleoptera, **99, 178, 282, 343, 427;** against Lepidoptera, **56, 387, 388;** against other insects, **178, 214, 470;** against mites, **50, 214, 442;** in dusts, **50, 343, 388;** in granules, **56, 99;** in sprays, **178, 214, 442, 470;** soil treatment with, **178, 282, 343, 387, 388;** laboratory tests of toxicity of, **427, 470;** contamination of vegetables by, **282.**
Isolan (1-isopropyl-3-methyl-5-pyrazolyl dimethylcarbamate), used alone or with Pyrazoxon in sprays against Aphids and mites, **138, 139, 140;** ineffective in systemic treatments of maté tea against *Fidicina mannifera*, **119.**
Isomalathion (O,S-dimethyl S-(1,2-di-(ethoxycarbonyl)ethyl) phosphorodithioate), effects of, on enzyme systems of insects and mice, **96.**
1-Isopropyl-3-methyl-5-pyrazolyl Dimethylcarbamate (see Isolan).
Isostasius inserens, parasite of wheat gall-midges in Germany, **79.**
Israel, pests of *Citrus* in, **274, 275;** pests of field and vegetable crops in, **417–420;** *Myzocallis maculata* in, **230;** new fungi infesting *M. maculata* in, **491;** beneficial insects in, **231, 275, 419.**
italicus, Calliptamus.
Italy, pests of conifers in, **362, 457;** *Panonychus ulmi* on fruit trees in, **403;** Aphids on lucerne and *Ononis* in, **230;** Cicadellid-borne virus of clover in, **470;** beneficial insects in, **231, 362, 457;**

parasites of *Lepidosaphes* spp. introduced into California from, **180**; probable spread of *Pseudonapomyza dianthicola* into France from, **283**.
Itoplectis, parasite of cotton leaf-rollers in Peru, **454**.
Itoplectis maculator, parasite and hyperparasite of *Choristoneura murinana* in France, **466**; parasite of *Tortrix rosana* in Switzerland, **6**.

J.

Jack Pine (see *Pinus banksiana*).
janthinana, Cydia (*Laspeyresia*).
Japan, Lepidoptera on crucifers in, **319, 476**; pests of rice in, **276, 321, 379, 422, 423, 453, 475**; pests of other cereals in, **159, 209**; mites on miscellaneous plants in, **152, 153, 275**; *Lymantria dispar* in, **379**; pests of stored products in, **208, 379**; insects and virus diseases of plants in, **35, 453**; new Anthocorid predacious on *Chilo suppressalis* in, **276**; species of *Coccophagus* of, **404**; virus disease of *Euproctis* spp. in, **37**.
Japanese Beetle (see *Popillia japonica*).
Japanese Red Pine (see *Pinus densiflora*).
japonica, Popillia.
japonicus, Tenuipalpus.
Jasminum sambac, mites on, in Hawaii, **74**.
Jimson Weed (see *Datura stramonium*).
Jordan, pests of cotton and vegetables in, **507**; Coccinellids predacious on mites in, **507**.
juglandicola, Chromaphis.
julianus, Strategus.
juncii, Lixus.
Juniperus bermudiana, Coccids on, in Bermuda, **416**.
junodi, Kotochalia (*Acanthopsyche*).
Junonia coenia, virus diseases of, in U.S.A., **386**.

K.

Kabatiella caulivora, relation of *Hylastes obscurus* to, on clover in Quebec, **313**.
Kale, Aphids on, in New Zealand, **374**.
kalmiae, Cerococcus.
Kalotermes durbanensis, bionomics and laboratory rearing of, in South Africa, **503**.
Kalotermes flavicollis, influence of humidity on, **459**.
Kalotermes minor, fumigation against, in buildings in U.S.A., **89**.
Kansas, pests of cereals in, **102, 123, 179, 187, 312, 425, 440**; *Aceria tulipae* transmitting wheat streak mosaic in, **179**; mite carried by *Aphis maidis* in, **102**; *Trogoderma glabrum* in stored cereals in, **333**; *Ligyrus gibbosus* on *Helianthus annuus* in, **235**; *Myzocallis* spp. on leguminous plants in, **214**; *Dissosteira longipennis* in, **309**.
kanzawai, Tetranychus.
Kaolinite, study of adsorption of insecticides on, **339**.
Kelthane (see 1,1-Bis(p-chlorophenyl)-2,2,2-trichloroethanol).
Kentucky, *Cydia pomonella* on apple in, **59**; *Cotinis nitida* on grapes in, **55**.
Kenya, insects on coffee in, **166, 409**; *Bemisia tabaci* and virus disease of sweet potato in, **497**; Aphids of, **213, 230**; *Cryptotermes dudleyi* in, **503**; *Schistocerca gregaria* in, **504, 505, 506**; Trogid destroying eggs of *S. gregaria* in, **410**.
Khapra Beetle (see *Trogoderma granarium*).
Kiskadee (see *Pitangus sulphuratus*).
Kochia scoparia, Diabrotica virgifera on, in U.S.A., **175**.
kolae, Balanogastris.
Kotochalia junodi (on *Acacia* in South Africa), parasite of, **250**; diseases of, **198, 250**; sprays against, **70, 71, 299, 300**.
kraemeri, Empoasca.
kühniella, Anagasta (*Ephestia*).
kuvanae, Ooencyrtus.
Kuwait, *Schistocerca gregaria* in, **160**.

L.

labyrinthella, Phyllocnistis.
lacca, Laccifer.
laccae, Pristomerus (see *P. šulci*).
Laccifer lacca (Lac Insect), *Holcocera pulverea* predacious on, in India, **324**.
Lachnosterna, soil insecticides against, on sweet potato in Louisiana, **49**.
lacteicolor, Apanteles.
lactella, Endrosis.
lacteus, Coptotermes.
lactis, Carpoglyphus.
Ladino Clover (see *Trifolium repens latum*).
Laelia fracta, parasites of, on rice in French Cameroons, **365**.
Laemophloeus, stored-product species of (see *Cryptolestes*).
laevigatus, Alphitobius; *Orius*.
laeviscuta, Microgaster.

Lagenaria vulgaris, Margaronia indica on, in India, **137.**
Lambdina fiscellaria fiscellaria, bionomics, parasites and disease of, on *Abies balsamea* in Newfoundland, **128**; development of, on foliage of other trees, **128.**
Lambdina fiscellaria lugubrosa, methods of detecting incipient outbreaks of, on conifers in British Columbia, **387**; measures against, **387.**
lambertianae, Conophthorus.
Lampides boetica (see *Cosmolyce*).
Lamprophorus tenebrosus, introduction of, against *Achatina fulica* in Guam, **103.**
Lamprosema diemenalis (see *Nacoleia*).
lanceolatisetae, Brevipalpus.
Lanelater fuscipes, introduction of, against *Oryctes rhinoceros* in Samoa, **158.**
langei, Liriomyza.
lanigera, Oregma (*Ceratovacuna*).
lanigerum, Eriosoma.
Lantana camara, Orthezia insignis on, in Egypt, **27**; insects introduced into Fiji against, **104**; attempted use of *Teleonemia scrupulosa* against, in Indonesia, **159.**
Laphygma eridania, used in tests of toxicity of insecticides, **20, 88, 231.**
Laphygma exempta, study of outbreaks and control of, on maize in S. Rhodesia, **364.**
Laphygma exigua, in French Cameroons, **365**; light-trap collections of, in Egypt, **29**; outbreak of, in European Russia, **244**; in U.S.A., **386, 425**; on beet, **244, 425**; on rice, **244**; on rye and lucerne, **244**; bionomics of, **29, 244**; parasites of, **365**; virus diseases of, **386**; tests and uses of insecticides against, **244, 425.**
Laphygma frugiperda, virus diseases of, in Colombia, **386**; migrations and helicopter survey of summer breeding foci of, in Venezuela, **453.**
laphygmae, Euplectrus.
Larch, *Taeniothrips laricivorus* on, in Austria, **66**; *Ips cembrae* on, in Britain, **142**; pests of, in Germany, **66**; *Pristiphora erichsonii* on, in U.S.A., **183, 391.**
Larch Sawfly (see *Pristiphora erichsonii*).
Larch Thrips (see *Taeniothrips laricivorus*).
lardarius, Dermestes.
laricella, Coleophora.
laricivorus, Taeniothrips.
Laricobius erichsonii (predacious on *Chermes* spp.), establishment of, in Canada, **266**; bionomics of, in central Europe, **201, 247.**
Larix (see Larch).
Larix decidua, killed by *Ips cembrae* in Britain, **143**; *Pristiphora erichsonii* on, in New York, **183.**
Larix leptolepis, Pristiphora erichsonii on, in New York, **183.**
larvarum, Tachina (*Exorista*).
Lasioderma serricorne, in West Africa, **212, 273**; in India, **473**; in U.S.A., **225**; in stored tobacco, **225**; in other stored products, **212, 273, 473**; bionomics of, **212, 225, 473**; amount of food required by, **172, 173**; pyrethrum aerosol against, **273**; used in tests of sulphuryl fluoride, **88**; suggested use of, against plant parasites of cereals, **473.**
Lasius niger, fostering of *Aphis fabae* by, in Britain, **306, 307.**
Laspeyresia caryana (see *Enarmonia*).
Laspeyresia janthinana, toreuta and *youngana* (see *Cydia*).
laspeyresiae, Phanerotoma.
latens, Petrovia.
lateralis, Chrysopa.
Latheticus oryzae, movements of, in wheat stored in bags, **161**; susceptibility of, to pyrethrum in oil, **171.**
laticeps, Bruchobius.
latinasus, Caulophilus.
latitarsis, Cnemodon.
latro, F., *Ptinus* (see *P. fur*).
latro, auct., *Ptinus* (see *P. clavipes* f. *mobilis*).
latus, Hemitarsonemus.
Laurentius eduardus, gen. et sp. n., on potato in Bolivia, **357.**
Lavandula angustifolia (see *L. vera*).
Lavandula spica (*latifolia*), *Thomasiniana lavandulae* on, in France, **206.**
Lavandula vera, Thomasiniana lavandulae on, in France, **206, 362.**
lavandulae, Thomasiniana.
Lavender (see *Lavandula vera*).
Lawns (see Turf).
Lead, *Hofmannophila pseudospretella* attacking, on telephone cables, **270.**
Lead Arsenate, in bait against *Heliothis virescens* on tobacco, **228**; in sprays: against *Cosmophila flava* on cotton, **474**; against pests of forest and shade trees, **127, 386, 391**; against orchard pests, **19, 84, 85, 180, 445**; against *Ancylis comptana* on strawberry, **131**; residues of, on apples, **478**; and DDT, **84**; and lime, **180**; and linseed oil, **391**; and methoxy-DDT, **84**; and pyrethrum, **127**; and sulphur, **180.**
Leaf-cutting Ants (see *Atta*).
Leafhopper, Aster (see *Macrosteles fascifrons*).

Leafhopper, Beet (see *Circulifer tenellus*).
Leafhopper, Potato (see *Empoasca fabae*).
Leafhopper, Six-spotted (see *Macrosteles fascifrons*).
Lebanon, finding and parasite of *Myzocallis maculata* on lucerne in, **230, 231.**
Lebistes reticulatus, risk of insecticides to, in Malaya, **154.**
lecontei, *Neodiprion.*
lectularius, *Cimex.*
Leek, stage of development of, in relation to *Hylemyia antiqua* in France, **283.**
Leionota (see *Hololepta*).
Lema, parasites of, on rice in French Cameroons, **30, 365.**
Lema melanopa, on cereals in Bulgaria, **117**; effect of fertilisers on infestation by, **118.**
Lema praeusta, bionomics of, on turmeric, etc., in India, **345.**
Lema semiregularis, bionomics of, on turmeric in India, **345.**
Lema signatipennis, on turmeric in India, **345.**
Lemon, tristeza disease in, in Algeria, **206**; *Aceria sheldoni* on, in Egypt, **28**; mites on, in U.S.A., **186, 224, 225, 429**; effect of, as food-plant on *Aonidiella aurantii* and its parasites, **393**; factors affecting oviposition of *Chrysopa californica* on, **186**; used in experiments with systemic insecticides, **46, 182, 183, 228, 229**; oil emulsions not reducing yield or quality of fruits of, **95, 182.**
Lentils, *Bruchus lentis* on, in Algeria, **111**; time of sowing of, in relation to *B. lentis*, **112.**
lentis, *Bruchus.*
lepidior, *Aeneolamia.*
Lepidiota frenchi, BHC against, on sugarcane in Queensland, **375.**
Lepidium perfoliatum, *Circulifer tenellus* on, in Idaho, **122.**
lepidopterae, *Eurytoma.*
lepidopus, *Mepachymerus* (*Steleocerus*) (see *M. baculus*).
Lepidosaphes beckii, on *Citrus* in South Africa, **149, 299**; effect of temperature on emergence of males of, **149**; behaviour of crawlers of, **299**; as food for *Chrysopa lateralis*, **312.**
Lepidosaphes ficus, natural enemies and biological control of, on fig in California, **179, 180.**
Lepidosaphes newsteadi, lizards destroying Coccinellids introduced against, on *Juniperus bermudiana* in Bermuda, **416.**
Lepidosaphes ulmi, parasites of, introduced into California from Europe against *L. ficus*, **180**; map of distribution of, **240.**
Leptacis tipulae, parasite of wheat gallmidges in Germany, **79.**
Leptinotarsa decemlineata (on potato), in Austria, **280**; in Czechoslovakia, **320**; in Germany, **280**; in Poland, **326–328**; in U.S.A., **227**; bionomics and physiology of, **326–328**; experiments with *Beauveria* spp. against, **279, 280, 328**; tests and uses of insecticides against, **202, 227, 320.**
Leptochloa virgata, *Solubea poecila* on, in British Guiana, **119.**
Leptocorisa acuta, sprays against, on rice in Philippines, **34, 35, 354.**
Leptocorisa varicornis, found in New Zealand in aircraft from Pacific Is., **158.**
Leptodiplosis, predacious on *Conophthorus resinosae* in Ontario, **129.**
Leptohylemyia (see *Hylemyia*).
Leschenaultia adusta, parasite of *Estigmene acraea* in Arizona, **222.**
Leskiopalpus diadema, parasite of sugarcane moth borers in Trinidad, **134.**
Lestodiplosis, predacious on Psyllids, **491.**
Lestodryinus (see *Dryinus*).
Lettuce, *Tylomyza pinguis* on, in Egypt, **24**; pests of, in U.S.A., **90, 100, 221, 427, 428**; insects and virus diseases of, **90, 498**; malathion residues on, **232.**
Leucania, assisting regeneration of tussock-grass in New Zealand, **360.**
Leucodiaspis (*Leucaspis*) *riccae*, bionomics and control of, on olive in Egypt, **26.**
leucogramma, *Entedon.*
leuconotus, *Anthores.*
leucophthalmus, *Philaenus.*
Leucopina (see *Leucopis*).
Leucopis americana, predacious on *Chermes piceae* in Canada, **12**; characters of, **12.**
Leucopis obscura (predacious on *Chermes* spp.), established in Canada, **12, 267**; seasonal activity of, in central Europe, **201, 246, 247**; characters of, **12.**
Leucopomyia (see *Leucopis*).
Leucoptera coffeella (on coffee), in South America, **409, 453**; in West Indies, **409**; erroneously recorded in Africa, **409**; BHC against, **453**; taxonomy of, **409.**
Leucoptera meyricki, on coffee in Kenya and Tanganyika, **409**; recorded as *L. coffeella*, **409**; taxonomy of, **409.**
Leucoptera spartifoliella, **409.**
lewisi, *Brevipalpus.*

Libya, pests of date palms and stored dates in, **297**; insects predacious on *Parlatoria blanchardii* in, **297**.
Light, effects of: on activity and oviposition by Diptera and moths, **246, 302, 346, 358, 490**; on diapause in *Chilo suppressalis*, **422, 423**; on *Piesma quadratum*, **67**; on spread of beetles from bags of grain, **161**. (See Ultra-violet Light.)
Light-traps, for Lepidoptera, **28, 223, 321, 364, 400**; for other insects, **223**; types of, **223, 400**; types of light for, **28, 223, 364, 400**.
lignosellus, Elasmopalpus.
ligustici, Otiorhynchus.
Ligustrum, Fieberiella florii on, in Ontario, **388**.
Ligustrum ovalifolium, Cicadellids on, in California, **445**.
Ligyrus gibbosus, sprays against, on *Helianthus annuus* in Kansas, **235**.
Lilac (see *Syringa vulgaris*).
lilacinus, Planococcus (see *Pseudococcus*).
Lilies (*Lilium*), *Liothrips vaneecki* on, in U.S.A. and Britain, **235, 456**.
Lily Bulb Thrips (see *Liothrips vaneeckei*).
Lily Moth (see *Brithys crini*).
Lima Beans, pests of, in U.S.A., **176, 227**.
limacina, Caliroa (*Eriocampoides*).
limbolarius, Holcostethus.
Lime (*Citrus*), *Aceria sheldoni* on, in Egypt, **28**; *Chrysomphalus ficus* on, in Florida, **386**; *Orthezia* on, in Grenadines, **136**.
Lime, treatment of poplar trunks with insecticides and, against *Trochilium apiforme*, **69**; repellency of sprays of, to *Conotrachelus nenuphar*, **180**; in mixed sprays (see also Bordeaux Mixture), **234, 337**; reducing efficiency of malathion, **337**.
Lime-sulphur (in sprays), against mites, **32, 70, 259, 404**; against *Phenacaspis pinifoliae*, **192**; and DDT, **480**.
limneriae, Eupelmus.
Limonius agonus, in Ontario, **130, 423**; in U.S.A., **384**; bionomics of, **384, 423**; heptachlor treatments against, in potato fields, **130**.
Limonius californicus (in U.S.A.), effect of crop rotations on, **309**; soil insecticides against, **178, 187**.
Limonius canus (in U.S.A.), effect of crop rotations on, **309**; soil insecticides against, **282**.
Lindorus lophanthae, effect of lizards on biological control of Coccids by, in Bermuda, **416**.
linearis, Neodiprion taedae.
lineaticollis, Antestiopsis.
lineatum, Trypodendron.
lineolaris, Lygus.
lineolata, Euscelis.
lineolatus, Adelphocoris.
lingnanensis, Aphytis.
Linoleic or Linolenic Acid, as factor in diet for *Platyedra gossypiella*, **435**.
Linseed Oil, in sprays, **127, 391**; in diet for *Platyedra gossypiella*, **435**.
Liothrips vaneeckei (on lily bulbs), in Britain, **456**; in U.S.A., **235**; feeding habits and control of, **235**.
Liparoscelis, insecticides against, on *Agave sisalana* in Mexico, **279**.
Liriomyza (in U.S.A.), systemic insecticides against, on cotton, **91, 424, 436**; parasite of species of, on other plants, **237**.
Liriomyza langei, experiments with virus diseases of plants and, in California, **497, 498**.
Liriomyza pusilla, **91, 436**.
Lissapol N, preference of *Myzus persicae* for plants sprayed with, **300**.
lissogaster, Bracon.
Lissonota, parasite of *Tortrix rosana* in Switzerland, **6**.
Lissonota buolianae, parasite of *Ennomos quercinaria* in Germany, **78**.
Lissorhoptrus oryzophilus, seed treatments with insecticides against, on rice in Texas, **341**.
Listronotus oregonensis, insecticides against, on parsley in New York, **181**.
Litchi, *Oligonychus biharensis* on, in Mauritius, **167**.
Lithobius, small effect of temperature on permeability of cuticle of, **83**.
Lithocolletis malimalifoliella, parasite of, on apple in Canada, **87**.
litura, Prodenia.
Lixophaga diatraeae (parasite of *Diatraea saccharalis*), in Marie Galante, **135**; introduction of, into Peru, **500**.
Lixus, on beet in Israel, **420**.
Lixus ascanii (on beet), in Bulgaria, **328**; in Israel, **420**.
Lixus juncii, bionomics of, on beet in Israel, **420**.
Lizards, destroying beneficial insects in Bermuda, **416**; suggested introduction of birds against, **416**.
lobosus, Tetranychus.
Lobotrachelus nigricornis, bionomics of, on *Hibiscus cannabinus* in Chad Territory, **408**.
Locusta migratoria migratorioides, international convention for control of, in Africa, **71**; selection of oviposition sites by, **253**; fluctuations in oxygen consumption with age and weight of,

83; relation of weight of hoppers to number of ovarioles in, **83**; Thiodan against, **141**.
Locustana pardalina, BHC against, in South Africa, **502**.
Locusts, aridity factor in ecology of, **370**, **371**; review of data on phase transformation in, **360**; Russian bibliography of, **360**. (See *Locusta*, *Locustana*, *Nomadacris* and *Schistocerca*.)
Lodgepole Pine (see *Pinus contorta*).
Lolium multiflorum, insects infesting, in Rhode Island, **236**.
Lolium perenne, *Chirothrips pallidicornis* on, in New Zealand, **258**; relation of forms of *Oscinella frit* to, in U.S.S.R., **80**.
Lolium rigidum, favouring *Oncopera fasciculata* in South Australia, **378**.
longicauda, *Zenillia* (*Phryxe*).
longicornis, *Chorinaeus*; *Diabrotica*; *Scolothrips*.
longinoda, *Oecophylla*.
longipennis, *Dissosteira*.
longipes, *Zelus*.
longirostris, *Rhynchocoris*.
longispina, *Bemisia* (see *B. tabaci*).
longissima, *Brontispa*.
Longleaf Pine (see *Pinus palustris*).
longus, *Caryedon* (*Pachymerus*).
lophthanthae, *Lindorus*.
Loquat (see *Eriobotrya japonica*).
lordi, *Czenspinskia*.
Lorryia, *Typhlodromus soleiger* reared on, in Germany, **402**, **403**; bionomics and control of, on *Citrus* in Morocco, **232**.
Lorsch Disease (see *Rickettsiella melolonthae*).
Lotus corniculatus, not attacked by *Apion ulicis*, **347**.
Louisiana, cotton pests in, **261**, **343**, **344**, **346**, **347**, **450**; sawfly on *Pinus taeda* in, **264**; Coleoptera on sweet potato in, **49**; *Empoasca fabae* overwintering in, **347**; insects in stored cereals in, **47**.
lounsburyi, *Aspidiotiphagus*.
Loxagrotis albicosta, bionomics of, on maize in Idaho, **426**.
Loxostege frustalis (in South Africa), failure to establish *Chelonus texanas* against, on *Pentzia*, **251**; new parasites and hyperparasites of, **110**.
Loxotropa tritoma (parasite of *Psila rosae*), introduced into Canada, **131**; in Norway, **36**; bionomics of, **131**, **132**; rearing of, on *Drosophila melanogaster*, **132**.
Lucerne, Aphids on, in Africa, south-west Asia and Cyprus, **230**; *Apion* spp. on, in Finland, **361**; Aphids on, in Italy, **230**; new Cicadellid on, in Mexico, **310**; *Hypera variabilis* on, in Poland, **458**; pests of, in U.S.S.R., **244**, **245**; pests of, in U.S.A., **62**, **63**, **124**, **174**, **175**, **184**, **185**, **214**, **220**, **226**, **228**, **229**, **230**, **237**, **310**, **334**, **347**, **383**, **424**, **428**, **430**, **441**, **491**; pests of, in Yugoslavia, **3**, **4**, **230**; *Macrosiphum pisum* transmitting virus to pulse crops from, in Holland, **330**; resistant to virus of *Desmodium* in Australia, **31**; experiments on relation of *M. pisum* to, **62**, **63**; resistance of varieties of, to *Myzocallis maculata*, **226**; unfavourable to *Limonius* in crop rotations, **309**; pollination of, by wild bees in North America, **190**, **348**; experiments with systemic insecticides and, **229**, **424**, **425**; systemic action of BHC in, **229**; problems of insecticide residues in, **229**, **351**.
Lucerne Flea (see *Sminthurus viridis*).
lucifugus, *Reticulitermes*.
ludeni, *Tetranychus*.
ludens, *Anastrepha*.
lugens, *Pachylophus*.
lugubris, *Carpophilus*.
lugubrosa, *Lambdina fiscellaria*.
lunata, *Stomorhina*.
Lupin, infected with new *Pseudomonas* in Queensland, **74**.
lutaria, *Sialis*.
lutea, *Disophrys*.
luteola, *Galerucella*; *Myzocallis* (*Therioaphis*).
luteolus, *Aphycus*.
lutescens, *Amblypelta*.
lybica, *Empoasca*.
Lycium, as food-plant of *Epitrix tuberis* in U.S.A., **340**.
lycopersici, *Vasates*.
Lycopodium clavatum, use of, in determination of density of Tyroglyphid eggs in flour, **40**.
Lygocerus niger, parasite of *Diaeretus rapae* in New Zealand, **373**.
Lygocerus piceae, parasite of *Cremifania nigrocellulata* in Austria, **201**.
Lygus, not transmitting mosaic of squash in California, **15**.
Lygus campestris, reducing yield and quality of carrot seed in Holland, **196**.
Lygus hesperus, reducing seed production of beet in Arizona, **174**; tests of insecticides against, **174**.
Lygus lineolaris (in U.S.A.), influence of irrigation and fertiliser on populations

of, on cotton, **121**; reducing seed production of lucerne, **228**; causing catfacing of peaches, **219**; insecticides against, **219, 228**.
Lygus vosseleri (on cotton), insecticides against, in Uganda and Tanganyika, **43, 44, 45**; survey of data on, **502**.
Lymaenon (*Gonatocerus*) *africanus*, parasite of *Tettigella spectra* in French Cameroons, **365**.
Lymantria dispar, in Azerbaijan Republic, **68, 69**; in Czechoslovakia, **289**; in Germany, **2**; in Japan, **379**; in Spain, **294**; in U.S.A., **425, 426, 431**; in Yugoslavia, **2, 3, 289**; on fruit trees, **2, 3, 68, 69**; in oak plantations, **294**; in forests, **2, 3, 68, 69, 289, 425, 426**; bionomics of, **68, 294**; effect of foodplant on development of, **2, 3, 68, 69**; effect of temperature on diapause in eggs of, **379**; birds destroying, **69**; parasites and biological control of, **2, 69, 294, 295**; occurrence and attempted use of polyhedral disease of, **3, 69, 426, 431**; susceptibility of, to diseases of *Hyphantria cunea*, **289, 290**; *H. cunea* susceptible to cocci from, **289**; aircraft application of DDT against, **289, 426**.
Lymantria monacha, outbreak of, on beech in Yugoslavia, **397**; natural enemies and disease of, **397**.
Lyonetia clerkella, on fruit trees and rose in Egypt, **24**.

M.

M-74 (see O,O-Diethyl S-2-(Ethylthio)-ethyl Phosphorodithioate).
M-80 (see O,O-Diethyl S-2-(Methylthio)-ethyl Phosphorodithioate).
M-81 (see O,O-Dimethyl S-2-(Ethylthio)-ethyl Phosphorodithioate).
M-82 (see O,O-Dimethyl S-2-(Methylthio)ethyl Phosphorodithioate).
M-85 (see O,O-Diethyl S-2-(Propylthio)-ethyl Phosphorodithioate).
Macadamia ternifolia, *Cryptophlebia illepida* on, in Hawaii, **104**.
Macalla thyrsisalis, Triton X-160 against, on *Swietenia mahagoni* in Florida, **386**.
Macrocentrus abdominalis, parasite of *Ennomos quercinaria* in Germany, **78**.
Macrocentrus ancylivorus, parasite of *Cydia molesta* in New Jersey, **93**; toxicity of DDT spray deposits to, **93**.
Macrocentrus maraisi, sp. n., parasite of *Loxostege frustalis* in South Africa, **110**; new parasite of, **110**.
macroderus, *Agrilus*.
Macroglenes penetrans, parasite of wheat gall-midges in Germany, **79**.
Macromischoides aculeatus, effect on, of sprays against mealybug-tending ants in Ghana, **211**.
macropilis, *Phytoseius*.
Macrosiphoniella (see *Macrosiphum*).
Macrosiphum, on *Acanthospermum hispidum* in South America, **189**; Thimet against, on strawberry in California, **451**.
Macrosiphum avenae, transmitting virus disease of cereals in Illinois, **18, 19**.
Macrosiphum euphorbiae, auct. (see *M. solanifolii*).
Macrosiphum granarium (see *M. avenae*).
Macrosiphum maidis (see *Aphis*).
Macrosiphum pisum (*pisi*), in Holland, **330**; in Kenya, **230**; in Quebec, **484**; in U.S.A., **50, 51, 62, 63, 184**; on lucerne, **62, 63, 184, 230**; on peas, **51, 52, 330, 484**; sugar-nitrogen ratio as factor in resistance of varieties of peas to, **484**; on other leguminous plants, **62, 63, 330**; virus disease transmitted by, **330**; studies on migrations and overwintering of, **51, 52, 62, 63**; endrin reducing infestation by, **184**; used in tests of toxicity of other insecticides, **20, 231**.
Macrosiphum rosae, *Praon aguti* reared on, **383**.
Macrosiphum sanborni, transmissibility of virus diseases of chrysanthemum and petunia by, in Britain, **147**.
Macrosiphum solani, in Britain, **147, 307**; in Norway, **308**; on potato, **307, 308**; as vector of virus diseases of chrysanthemum and potato, **147, 308**; map of distribution of, **240**.
Macrosiphum solanifolii, in Britain, **147, 307**; in Norway, **308**; in Queensland, **258**; in U.S.A., **15, 51, 227, 492**; transmitting mild mosaic of chrysanthemum, **147**; on potato, **147, 227, 307, 308, 492**; as vector of potato viruses, **147, 308, 492**; factors affecting infestation of potato by, **147, 307**; on squash, **15**; on tomato, **227, 258**; tomato virus transmitted by, **258**; low-level flight of, **51**; insecticides against, **227, 492**; EPN favouring, **15**; method of increasing experimental populations of, **492**.
Macrosteles fascifrons, in Ontario, **388**; in U.S.A., **17, 96, 220, 236, 492**; on forage crops and lawns, **220, 236**; transmitting strains of aster-yellows virus to various plants, **17, 96, 388, 492**; sprays against, **236**; mass rearing of, **96**.

Macrosteles viridigriseus, diseases of plants transmitted by, in Britain, **146.**
Macrotermes goliath, insecticide treatment of nests of, in Belgian Congo, **151.**
maculata, *Epicauta*; *Myzocallis* (*Therioaphis*).
maculator, *Itoplectis.*
maculatus, *Callosobruchus*; *Dermestes*; *Rhaphitelus*; *Trimeromicrus.*
maculicornis, *Aphytis*; *Phaeogenes.*
maculipennis, *Plutella.*
maculosa, *Diacrisia.*
Madagascar, Scoliid introduced into Fiji from, against *Oryctes rhinoceros*, **105**; risk of introduction of Fiji disease of sugar-cane into Mauritius from, **371.**
madida, *Feronia.*
Mafia Island, *Pseudotheraptus wayi* on coconut in, **415.**
Magicicada septendecim, Sevin against, in U.S.A., **448**; on apple, **448.**
mahanti, *Clania.*
Mahasena theivora, on tea in India, **114.**
Mahogany (see *Swietenia mahagoni*).
maidis, *Aphis* (*Macrosiphum*, *Rhopalosiphum*); *Dalbulus*; *Peregrinus.*
Maine, low-level flights of Aphids in, **51.**
Maize, *Agriotes obscurus* injuring, in Canada, **480**; pests of, in Egypt, **24, 27**; Noctuids on, in Ghana, **152**; pests of, in India, **474**; *Pyrausta nubilalis* on, in Japan, **159**; Tetranychid on, in Mauritius, **167**; *Dalbulus* spp. and stunt virus diseases of, in Mexico, **17, 493**; *Sesamia nonagrioides* on, in Morocco, **295**; *Heteronychus sanctae-helenae* on, in New South Wales, **191**; *Calandra oryzae* on, in Nigeria, **212**; pests of, in Philippines, **354**; pests of, in S. Rhodesia, **166, 364, 368**; *Busseola fusca* on, in Tanganyika, **39, 40**; Lepidoptera on, in Uganda, **303, 304**; pests of, in U.S.A., **55, 56, 61, 91, 93, 94, 100, 101, 122, 175, 219, 310, 311, 350, 351, 385, 426, 449**; *Laphygma frugiperda* on, in Venezuela, **453**; apparatus for measuring injury to ears of, by *Heliothis zea*, **236**; development of varieties of, resistant to *H. zea*, **122, 123**; factor lethal to *H. zea* in, **101**; factors affecting behaviour and mortality of *Pyrausta nubilalis* on, **262, 311, 382, 458**; unfavourable to *Limonius* in crop rotations, **309**; translocation of BHC in, from treated soil, **54**; insecticides causing injury to, **55, 88, 471**; DDT residues on, **57**; mixtures for seed treatment of, **93.**
Maize (Stored), insects infesting, **47, 66, 98, 173, 209, 212, 298, 312, 333, 334**; weight-loss caused by *Sitotroga cerealella* in, **334**; treatment of, with BHC and DDT, **47**; studies relating to methyl-bromide fumigation of, **298, 324.**
Maize Meal, in baits for *Heliothis virescens*, **228**; in medium for rearing *Drosophila*, **132.**
Maize Oil, as factor in diet for *Platyedra gossypiella*, **435.**
Maize Stalkborer (see *Busseola fusca*).
majalis, *Amphimallon.*
Malacosoma, parasites of, on fruit trees, etc., in California, **384.**
Malacosoma disstria (in U.S.A.), sampling method for predicting defoliation by, in forests, **488**; races and parasites of, **384.**
Malacosoma fragile, experiments with virus infecting, on *Ceanothus* and *Purshia* in California, **125.**
Malacosoma neustria, on fruit trees in Czechoslovakia, **289**; parasite of, in Spain, **294**; fruit trees and oaks as food-plants of, in Yugoslavia, **3**; infection of, with *Thelohania hyphantriae*, **289.**
Malacosoma pluviale, races and parasites of, in California, **384.**
malacosomae, *Tetrastichus.*
malaitensis, *Amblypelta cocophaga.*
Malaoxon (O,O-dimethyl S-(1,2-di-(ethoxycarbonyl)ethyl) phosphorothioate), probable toxic metabolite of malathion in insects and mammals, **96, 179**; anticholinesterase activity of, **179**; other properties and suggested use as an insecticide of, **179.**
Malathion, against Aphids, **139, 175, 226, 227, 336, 341, 407, 430, 492, 496**; against Cicadellids, **226, 227, 337, 494**; against Coccids, **90, 97, 103, 192, 284, 297, 299, 433, 486, 487**; against other Hemiptera, **73, 96, 151, 152, 405**; against Curculionids, **84, 219, 443, 446**; against other Coleoptera, **60, 99, 226, 227, 349, 368**; against fruit-flies, **24, 90, 91, 217, 446, 448, 508**; use of, to kill ants in fruit-fly traps, **350**; against other Diptera, **434**; against Noctuids, **49, 92, 93, 100, 187, 226, 227, 407, 425, 443, 444**; against other Lepidoptera, **14, 56, 94, 131, 226, 227, 242, 323, 469, 487**; against *Sminthurus viridis*, **31, 32**; against Thysanoptera, **6, 94, 95, 349, 446**; against mites, **31, 32, 34, 58, 176, 177, 214, 227, 274, 281, 354**; resistance of strains of *Tetranychus*

telarius to, **57**; action of, on *Tyroglyphus farinae* in flour, **53**; harmful to natural enemies of orchard pests, **139**; **190**; bee colonies not affected by, **448**; laboratory tests of toxicity of, to insects, **49**, **174**, **217**, **219**, **236**, **352**, **391**, **420**, **450**, **470**, **473**, **486**; differences in toxicity, anti-enzyme action and metabolism of, in insects and mammals, **96**, **179**, **231**; effects of, on apple, **84**, **242**; investigations on residues of, on plants, **232**, **233**, **242**, **281**, **351**; in liquefied-gas aerosols, **226**, **227**; in bait-sprays, **24**, **90**, **91**, **446**, **448**; in dusts, **14**, **58**, **60**, **92**, **93**, **174**, **176**, **177**, **227**, **232**, **233**, **405**, **430**, **473**, **486**; in granules, **56**, **94**, **99**, **434**; in sprays, **6**, **32**, **34**, **49**, **56**, **58**, **73**, **84**, **90**, **94**, **96**, **97**, **100**, **103**, **131**, **139**, **151**, **152**, **175**, **187**, **192**, **214**, **217**, **219**, **227**, **232**, **233**, **242**, **274**, **281**, **284**, **297**, **299**, **323**, **336**, **337**, **341**, **349**, **351**, **352**, **354**, **368**, **391**, **405**, **407**, **420**, **425**, **430**, **433**, **434**, **443**, **444**, **446**, **469**, **470**, **473**, **486**, **487**, **492**, **494**, **496**, **508**; applied from aircraft, **187**, **448**, **486**; soil treatment with, **60**; cloth impregnated with, for screening greenhouses, **94**, **95**; effect of temperature and humidity on toxicity of, **473**; and DDD, **131**; and DDT, **92**, **97**, **151**, **152**, **227**, **443**, **444**, **487**, **494**; and dieldrin, **349**; and Dilan, **227**; and endrin, **450**; and EPN, **450**; and ethyl-DDD, **100**, **349**; and heptachlor, **349**; lime reducing efficiency of, **337**; and methoxy-DDT, **352**; and oil emulsions, **284**, **337**, **354**, **433**; and pyrethrum, **227**, **352**; and rotenone, **93**; and Strobane, **227**; and toxaphene, **227**, **443**; physical properties of, **179**; malaoxon a probable toxic metabolite of, **96**, **179**.

Malaya, Lepidopterous stem-borers on rice in, **73**, **74**, **153**, **276**, **277**; parasites and biological control of rice stem-borers in, **73**, **74**.

mali, Aphelinus; *Mediolata*; *Pterocyclon* (*Monarthrum*); *Sappaphis* (see *Anuraphis roseus*).

Maliarpha, synonym of, **172**.

Maliarpha separatella (on rice), in West Africa and Swaziland, **172**; in Uganda, **303**; type of genus, **172**; synonymy of, **172**.

malimalifoliella, Lithocolletis.

malinellus, Hyponomeuta padellus.

Maltings, *Cryptolestes ferrugineus* infesting, in Britain, **42**.

malus, Hemisarcoptes.

Malva, Earias insulana on, in Israel, **419**; *Tetranychus telarius* on, in Jordan, **507**.

Mamestra brassicae, natural and experimental parasitism of eggs of, by *Trichogramma* spp. in central Europe, **399**; factors affecting winter and summer diapause in, in Japan, **363**, **476**; synthesis of acetylcholine in eggs of, **340**.

Manatha assamica, on tea in India, **114**.

mancus, Agriotes.

Manganese Oxide or Sulphate, spray mixtures containing, **233**, **234**.

mangiferae, Aceria; *Drosicha* (see *D. stebbingi*).

mangiferus, Oligonychus.

Mango, *Ceratitis capitata* on, in Costa Rica, **121**; *Aceria mangiferae* on, in Egypt, **28**; *Dacus dorsalis* on, in Hawaii, **90**; insects on, in India, **163**, **470**; Tetranychids on, in Mauritius, **167**; *Aleurocanthus woglumi* on, in Pakistan, **73**; *Oligonychus punicae* on, in U.S.A., **386**.

Mangold, effect of insecticide seed treatment on growth of, **20**.

manicatus, Chirothrips.

Manihot esculenta (see Cassava).

Manila Hemp (see *Musa textilis*).

Manitoba, prevalence and parasitism of *Bruchophagus caraganae* in seeds of *Caragana* spp. in, **189**; pests of conifers in, **265**, **267**; insects in stored wheat in, **392**.

mannifera, Fidicina.

Maple (see *Acer*).

Maps, of distribution of insect pests, **240**, **509**.

maraisi, Macrocentrus.

mařani, Quadraspidiotus (see *Q. schneideri*).

Marasmia trapezalis, parasites of, on rice in French Cameroons, **365**.

margaritosa, Peridroma (see *P. saucia*).

Margaronia indica, bionomics of, on cucurbits in India, **136**.

marginata, Cephalcia.

marginicollis, Pristomerus.

Mariana Islands, use of snail predacious on *Achatina fulica* in, **103**.

marianae, Tetranychus.

Marie Galante, parasites of *Diatraea saccharalis* on sugar-cane in, **135**.

maritimus, Pseudococcus.

Marlate, **73**.

marlatti, Phoenicococcus.

marshalli, Bruchus (see *Callosobruchus rhodesianus*).

martinii, Neodiscodes.

Maruca testulalis, parasites and biological control of, on *Cajanus cajan* in Mauritius, **421**; insecticides favouring, on beans in New South Wales, **322**.
Maryland, *Magicicada septendecim* on apple in, **448**; sawfly on *Pinus taeda* in, **265**; insects on ornamental plants and vegetables in, **96, 226**; mite of complex of *Tetranychus telarius* in, **57, 439**.
masii, Eretmocerus; *Ooencyrtus*.
Massachusetts, Coccids on cranberry in, **103**; sawfly on pines in, **265**; *Tetranychus telarius* in, **57, 439**.
massasoit, Sympiesis.
Mastotermes darwiniensis, methods of testing treatments for protecting wood from, in Australia, **479**.
Maté Tea (see *Ilex paraguensis*).
materiarius, Gnathotrichus.
mathias, Pelopidas.
Matrimony Vine (see *Lycium*).
Matsucoccus resinosae, natural enemies of, on *Pinus* spp. in U.S.A., **259**; effect of cold on, **259**.
maupasi, Rhabditis.
mauritanicus, Tenebroides.
mauritia, Spodoptera.
mauritianus, Dorilas; *Pseudogonatopoides*.
Mauritius, Lepidoptera on *Cajanus cajan* in, **421**; Delphacids on sugar-cane in, **371, 372**; mites on other plants in, **167, 168**; natural enemies and biological control of pests in, **167, 168, 371, 372, 421**; risk of introduction of Fiji disease of sugar-cane into, **371**.
maxillosum, Psalidium.
maxillosus, Gnathocerus.
Mayetiola destructor, hydroponic culture of wheat for infestation with, **446**.
Mayweed (see *Anthemis cotula*).
Meadow Foxtail (see *Alopecurus pratensis*).
Meadow Spittlebug (see *Philaenus leucophthalmus*).
medicaginis, auct., *Aphis* (see *A. craccivora*).
Medicago, Myzocallis spp. on, in Kansas, **214**.
Medicago sativa (see Lucerne).
medinalis, Cnaphalocrocis.
Mediolata mali, predacious on Tetranychids in Quebec and Germany, **85, 292**.
mediopunctatus, Pediobius (*Pleurotropis*).
Mediterranean Fruit-fly (see *Ceratitis capitata*).
Medoralis (see *Aphis*).
Megachile perihirta, bionomics of, pollinating lucerne in Alberta, **190**.
Megaselia bovista, on mushrooms in England, **81**.
Megaselia halterata (*plurispinosa*), on mushrooms in England, **82**.
Megastigmus specularis, bionomics of, on *Abies balsamea* in Canada, **267**.
megatoma, Attagenus.
Meigenia bisignata, bionomics of, parasitising *Phytodecta fornicata* in Yugoslavia, **4**.
Melaleucopis, gen. n., **136**.
Melaleucopis ortheziavora, sp. n., predacious on *Orthezia* in Peru, **136**; type of genus, **136**.
Melaleucopis simmondsi, sp. n., predacious on *Orthezia* in Grenadines, **136**.
Melanagromyza phaseoli, dust and sprays against, on beans in New South Wales, **322**.
melanderi, Nomia.
melanocephalus, Exochomus.
melanogaster, Drosophila.
melanopa, Lema.
Melanoplus, in U.S.A., **228, 308**; insects destroying egg pods of, **308**; insecticides against, injuring lucerne, **228**.
Melanoplus bivittatus, in Wisconsin, **228**.
Melanoplus confusus, in Wisconsin, **228**.
Melanoplus differentialis, transmitting virus diseases of plants in U.S.A., **18, 248**.
Melanoplus mexicanus, effect of climate on populations of, in Saskatchewan, **193**; in Wisconsin, **228**.
meles, Hypera.
Melia azadirachta, use of, against *Nomadacris septemfasciata* in Tanganyika, **504**.
Melilotus, Myzocallis riehmi on, in Persia, **230**; insects on, in U.S.A., **180, 214, 444**; experiments with *Myzocallis* spp. and, **214**; unfavourable to *Limonius* in crop rotations, **309**.
Melilotus alba, not attacked by *Apion ulicis*, **347**.
Melittia cucurbitae, dusts against, on squash in Ontario, **23**.
Melittobia diopsisephila, parasite or hyperparasite of Diptera infesting rice in French Cameroons, **30, 111**.
mellonella, Galleria.
Melolontha, natural enemies and diseases of larvae of, in Germany, **290–291**.
Melolontha hippocastani, in Germany, **290**; effect of flooding on larvae of, **401**.
Melolontha melolontha (*vulgaris*), in France, **7, 206**; in Germany, **204, 290**; in Hungary, **68**; in Switzerland, **468**; in U.S.S.R., **80**; on beet, **80, 204**; on strawberry, **7**; flight orientation in, **206**; parasites of, **68**; diseases of,

468; insecticides against larvae of, 7, 8, 204.
melolonthae, Plistophora; *Polymastix*; *Rickettsiella* (*Rickettsia*).
Melon, *Dacus cucurbitae* on, in Hawaii, 446; pests of, in U.S.A., 14, 60, 237; DDT causing injury to, 14, 15.
Melon Aphis (see *Aphis gossypii*).
Melon Fly (see *Dacus cucurbitae*).
membranaceus, Brachytrupes.
Menochilus sexmaculatus, failure to establish, against Aphids in Texas and Mexico, 353.
Mepachymerus baculus (*lepidopus*), parasite of *Diopsis thoracica* in French Cameroons, 30; parasite of, 30.
Mercaptofos, 285.
mercator, Oryzaephilus.
Mercuric Chloride, in drench against *Hylemyia brassicae*, 271.
Mercurous Chloride, uses of, against *Hylemyia* spp., 271, 389.
meridionalis, Taeniothrips (see *T. vulgatissimus*).
Mermis, infesting Lamellicorns in New Zealand and Australia, 359, 377.
Mermis indica, infesting Lepidoptera in India, 474.
Merodon bombiformis, on *Gladiolus* corms in South Africa, 250.
Merodon equestris, on imported bulbs in South Africa, 250; treatments of *Narcissus* bulbs against, in England, 464.
mesembrinus, Typhlodromus.
mesembryanthemi, Pulvinaria.
Mesembryanthemum spp., *Pulvinaria mesembryanthemi* on, in Argentina, 116.
Mesochorus breviscapus, sp. n., hyperparasite of *Loxostege frustalis* in South Africa, 110.
Mesochorus phyllotratae, sp. n., hyperparasite of *Phyllotreta* in France, 283.
Mesoleius aulicus (*tenthredinis*), varying importance of, as parasite of *Pristiphora erichsonii* in U.S.A., 183.
Metacide (mixture of methyl-parathion and parathion), against Aphids, 341, 438, 496; against other insects, 103, 337, 438; against mites, 74, 176; in dust, 176; in sprays, 74, 103, 337, 341, 438, 496; and fungicide, 337; not translocated in beet plants, 496; *Jasminum sambac* injured by, 74.
Metagonistylum minense (parasite of *Diatraea* spp.), in French Antilles, 135; establishment and value of, in British Guiana and Venezuela, 356; introduction of, into Peru, 500; failure to introduce, against rice stem-borers in Malaya, 74.
Metamasius hemipterus, effect of control of *Diatraea* on infestation of sugarcane by, in Venezuela, 356.
Metaphycus (see *Aphycus*).
Metasystox (see Methyl-demeton).
Metatetranychus (see *Panonychus*).
Meteorus testaceus, parasite of *Marasmia trapezalis* in French Cameroons, 365.
Meteorus versicolor, introduced parasite of *Stilpnotia salicis* in Canada, 127.
6-Methoxy-2(3)-benzoxazolinone, as factor in resistance of maize to *Pyrausta nubilalis*, 458.
p-Methoxybenzyl Phenyl Sulphide, and derivatives, tests of, against Tetranychid eggs and larvae, 381.
Methoxy-DDE, reactions of, on dust diluents, 339.
Methoxy-DDT (Methoxychlor), against Cicadellids, 227, 228, 236, 337; against other Hemiptera, 73, 219, 227, 228; against Curculionids, 84, 219, 341, 438; against other Coleoptera, 227; against fruit-flies, 90, 217, 275; against Lepidoptera, 15, 23, 131, 154, 219, 227, 342, 425; against Orthoptera, 154, 228; against *Reticulitermes* spp., 225, 447; laboratory tests of toxicity of, to insects, 154, 217, 236, 352; effect of, on *Tyroglyphus farinae* in flour, 53; risk of, to bees and Coccinellids, 275; in liquefied-gas aerosols, 227; in dusts, 15, 23, 438; reactions of, on dust diluents, 339; in sprays, 73, 84, 90, 131, 154, 219, 228, 236, 275, 337, 342, 425; seed treatment with, 341; persistence of, in soil, 225; effect of, on soil micro-organisms, 156; in mixtures with other insecticides, etc., 84, 227, 337, 352, 438.
Methyl Bromide (as a fumigant), against *Steneotarsonemus pallidus* on strawberry, 355; against pests of stored products, 88, 132, 133, 242, 273, 298, 334; in relation to respiration in *Tenebroides mauritanicus*, 313, 314; not producing protective stupefaction in *T. mauritanicus*, 314; effect of, on germination of cereal seeds, 324; methods and equipment for use of, 132, 298, 342, 355; sulphuryl fluoride compared with, 88, 89.
Methyl Cellulose, as adhesive for seed treatments, 341, 450.
Methyl Chloride, as propellent for aerosols, 226.
Methyl-demeton (dimethyl 2-(ethylthio)-ethyl phosphorothioate), against Aphids, 115, 116, 139, 373, 374;

against other insects, **119, 349, 405**; against mites, **37, 140, 261, 292**; Syrphids and bees killed by, **139, 374**; in sprays, **37, 115, 139, 140, 261, 292, 349, 374, 405**; applied from aircraft, **374**; ineffective as systemic insecticide by other methods of application, **116, 119.**
Methyl-demeton-S (O,O-dimethyl S-2-(ethylthio)ethyl phosphorothioate), ineffective in treatments of lucerne against *Myzocallis maculata*, **424.**
Methyl Eugenol, in bait for *Dacus dorsalis*, **91.**
N-Methyl-1-naphthyl Carbamate (see Sevin).
Methyl-parathion, against *Anthonomus grandis*, **344, 438, 443, 446**; against Aphids, **139, 438**; against *Ceresa bubalus*, **245**; against *Dasyneura brassicae*, **456**; against Lepidoptera, **14, 95, 438, 444**; against mites, **50, 58**; against Thysanoptera, **349, 445, 446**; use of, to protect cotton plants from *Ancistrotermes*, **151**; laboratory tests of toxicity of, to stored-product beetles, **236**; Syrphids killed by, **139**; effect of, on squash, **15**; in dusts, **14, 50, 58, 344, 438**; in sprays, **58, 95, 139, 245, 349, 438, 443, 444, 445, 446, 456**; applied by aeroplane, **95**; and calcium arsenate, **438**; and DDT, **50, 438, 443**; and dieldrin, **438**; and parathion (see also Metacide), **245.**
O-Methyl O-2,4,5-Trichlorophenyl Phosphoramidothioate, in dust and spray against *Tetranychus telarius*, **176.**
Methylene Chloride, as a solvent in aerosol formulae, **227.**
Metisa plana, on tea in India, **114.**
mexara, Empoasca.
Mexican Bean Beetle (see *Epilachna varivestis*).
Mexican Fruit-fly (see *Anastrepha ludens*).
mexicana, Peosina.
mexicanus, Melanoplus.
Mexico, pests of *Agave* in, **278, 279**; *Dalbulus* spp. and virus diseases of maize in, **17, 493**; *Anastrepha ludens* in, **184**; new species of *Empoasca* in, **310**; insect and fungus parasites of *Aegiala hesperiaris* in, **278**; failure to establish natural enemies of *Platyedra gossypiella* and Aphids in, **352, 353.**
meyricki, Leucoptera.
Mezium affine, bionomics and rearing of, in Britain, **64**; susceptibility of, to pyrethrum in oil, **171.**
Mice, insects not affected by endrin sprays against, in apple orchards in Virginia, **447, 487.**
michaelseni, Coptotermes.
Michigan, forest pests in, **259, 265, 426**; Diptera on spinach in, **434.**
Microbracon (see *Bracon*).
Microcryptus (see *Aptesis*).
Microctonus (parasite of *Phyllotreta*), new parasite of, in France, **283.**
Microdus diatraeae (see *Agathis stigmatera*).
Microgaster austrina, parasite of *Marasmia trapezalis* in French Cameroons, **365.**
Microgaster laeviscuta, parasite of *Acleris comariana* in Germany, **195.**
microgaster, Horismenus.
Micronesia, parts of a work on insects of, **36, 156, 404.** (See also Guam.)
Microtypus, parasite of *Dioryctria disclusa* in Ontario, **315.**
Microweisea suturalis, effect of lizards on biological control of Coccids by, in Bermuda, **416.**
migratoria, Locusta.
migratorioides, Locusta migratoria.
militaris, Apanteles.
Milk, insecticide residues in, **99, 229, 230**; use of, for feeding *Hylemyia coarctata*, **43, 302.**
Milkweed (see *Asclepias*).
Milkweed Bug, Large (see *Oncopeltus fasciatus*).
Milky Disease, in *Costelytra zealandica*, **359.** (See *Bacillus euloomarahae, B. fribourgensis, B. lentimorbus* and *B. popilliae*.)
Millet, Bulrush (see *Pennisetum typhoides*).
Millet, Finger (see *Eleusine coracana*).
minense, Metagonistylum.
Mineola vaccinii, on cranberry in Canada, **194.**
minima, Carulaspis.
Minnesota, forest pests in, **265, 347, 348, 391**; new *Trogoderma* in silk in, **262**; fungus infesting sweet-clover weevil in, **180.**
minor, Calandra oryzae (see *C. sasakii*); *Kalotermes.*
minuta, Tiphia.
minutum, Trichogramma.
minutus, Cryptolestes.
Mississippi, *Enarmonia caryana* on pecan in, **350.**
Missouri, Mirids on cotton in, **121**; *Diabrotica virgifera* in, **175.**
Mites, relation of, to plant virus diseases, **70, 179, 388, 492**; attacking insects, **47, 79, 284, 296, 333**; attacking other mites, **47, 85, 168, 190, 203, 267, 268, 292, 311, 333, 402, 403**; natural enemies of, **27, 47, 58, 85, 167, 168,**

190, 203, 267, 268, 292, 310, 311, 333, 402, 403; classification and new species of, **28, 261, 275, 291, 311, 318.**
mobilis, Ptinus clavipes.
molesta, Cydia (*Grapholitha*).
molestae, Angitia (*Horogenes*).
molitor, Hecistopsilus; *Tenebrio.*
mollis, Ernobius.
mombinpraeoptans, Anastrepha.
Momordica balsamina, Dacus cucurbitae on, in Hawaii, **508.**
monacha, Lymantria.
Monalonion bahiense, on cacao in Bahia, **318.**
Monalonion bondari, on cacao in Bahia, **318.**
Monarthropalpus buxi, sprays against, on *Buxus* in Maryland, **97.**
Monarthrum mali (see *Pterocyclon*).
Monilia, probably spread by *Rhynchites bacchus* on fruit trees in Yugoslavia, **287.**
moniliferus, Pachyrhynchus.
Monilinia fructicola (see *Sclerotinia*).
monitorana, Eucosma.
Monochamus mutator, in fire-killed pines in Ontario, **481.**
Monochamus notatus, in fallen or fire-killed conifers in New York and Ontario, **126, 481.**
Monochamus scutellatus, in fallen or fire-killed conifers in New York and Ontario, **126, 481.**
Monodontomerus aereus, hyperparasite of *Choristoneura muriana* in France, **466**; parasite of *Tortrix rosana* in Switzerland, **6.**
Monolepis nuttalliana, as food-plant of *Circulifer tenellus* in Idaho, **122.**
Montana, *Dendroctonus pseudotsugae* on *Pseudotsuga menziesii* in, **218**; parasite of *Cephus cinctus* in, **122.**
montana, Aeneolamia reducta.
montanus, Colladonus.
monticolae, Dendroctonus (see *D. ponderosae*).
Montmorillonite, study of adsorption of insecticides on, **339.**
moorei, Amsacta.
Mordellistena parvula, bionomics of, on hemp in Bulgaria, **328.**
mori, Bombyx; *Panonychus* (see *P. citri*).
morio, Tiphia.
mormideae, Telenomus.
Morocco, pests of fruit trees in, **232, 296**; *Sesamia nonagrioides* on maize in, **295**; new *Carpophilus* in, **66**; natural enemies and biological control of *Parlatoria blanchardii* in, **296, 297.**
mosaicivectura, Bemisia gossypiperda (see *B. tabaci*).
mosellana, Sitodiplosis.
Mosquito Larvae, used in tests of phosphorus insecticides, **46, 231.**
Mousetail (see *Myosurus aristatus*).
muiri, Dicranotropis.
Mulberry, Tetranychids on, in Japan, **152, 153**; *Aleurocanthus woglumi* on, in Pakistan, **73**; as food-plant for *Hyphantria cunea* in Yugoslavia, **3.**
multisetis, Tetranychus (see *T. cinnabarinus*).
multistriatus, Scolytus.
murinana, Choristoneura (*Cacoecia*).
murinanae, Glypta; *Nosema.*
Murphos 20, **34.**
Murphy Tepp, **34.**
Murvesco, **34.**
Musa (see Banana).
Musa textilis (Manila Hemp), Aphids transmitting mosaic of, in Philippines, **354.**
Musca domestica, mortality of, at low temperatures, **235**; used in tests of insecticides, **38, 46, 88, 231, 346**; effects of phosphorus compounds on enzyme systems of adults of, **46, 96**; acetylcholine and cholinesterase activity in normal and parathion-treated eggs of, **254.**
Muscina spp., insecticides against, on spinach in Michigan, **434.**
musculosa, Oria.
Musgraveia, gen. n., **114.**
Musgraveia sulciventris, on *Citrus* in Australia, **114**; type of genus, **114.**
Mushrooms, *Megaselia* spp. on, in Britain, **81.**
mutata, Eupithecia togata.
mutator, Monochamus.
mutilatus, Carpophilus.
myopaeformis, Tetanops.
Myosurus aristatus, as food-plant of *Circulifer tenellus* in Idaho, **122.**
Myrtle (*Myrtus communis*), Cicadellids on, in California, **445.**
mytilaspidis, Aphytis.
Myzocallidium (see *Myzocallis*).
Myzocallis luteola, on clover in Turkey, **230.**
Myzocallis maculata (Spotted Alfalfa Aphis), in U.S.A., **124, 175, 177, 214, 226, 230, 334, 424, 491**; distribution and parasites of, in Europe, Africa and Asia, **230, 231**; fungi infesting, **124, 491**; resistance of varieties of lucerne to, **177, 226**; natural and experimental infestation of other plants by, **213, 214, 230**; tests of sprays and systemic insecticides against, **124, 175, 177, 424**; resistance to parathion in

strains of, **124**; techniques for estimating populations of, **334**.
Myzocallis ononidis, on *Ononis* in Italy, **230**.
Myzocallis riehmi, on *Melilotus* in Kansas and Persia, **214**, **230**; study of food-plant range of, **213**, **214**.
Myzocallis trifolii, on lucerne in Egypt, **230**; on clovers in Kansas, Turkey and Persia, **214**, **230**; study of food-plant range of, **213**, **214**.
Myzodes (see *Myzus*).
Myzus ascalonicus, records of, in Denmark, **79**, **405**; experimentally transmitting virus disease of cabbage in Germany, **400**.
Myzus certus (*caryophyllacearum*), on glasshouse *Cerastium* in Denmark, **79**.
Myzus circumflexus, experimentally transmitting virus disease of cabbage in Germany, **400**.
Myzus padellus, food-plants of, in Norway and Britain, **308**.
Myzus persicae, in Australia, **31**, **258**; in Austria, **199**, **200**; in Britain, **143**, **144**, **147**, **196**, **307**; in Germany, **194**, **400**; in New Zealand, **255**; in Norway, **308**; in Tanganyika, **497**; in U.S.A., **15**, **51**, **52**, **53**, **404**, **451**, **492**, **493**, **495**; on beet, **199**, **200**; and virus diseases of beet, **52**, **53**, **155**, **196**, **200**, **495**, **496**; and virus diseases of *Capsicum*, **15**, **493**; and chrysanthemum viruses, **147**; on crucifers, **255**, **451**; and virus diseases of crucifers, **143**, **144**, **400**; *Prunus* spp. as primary food-plants of, **194**, **195**; on potato, **308**; growth stages of potato in relation to, **307**; transmitting virus diseases of potato, **307**, **492**; factors affecting transmission of potato viruses by, **19**, **147**, **165**, **495**; on strawberry, **451**; and virus disease of sweet potato, **497**; history of, on tobacco, **404**; and leaf-shrivel virus of tomato, **258**; and virus disease of *Trifolium subterraneum*, **31**; use of shade-tent technique for study of spread of viruses by, **492**; trap studies of flights of, **51**, **200**, **203**; *Aphidius testaceipes* reared on, **383**; tests and uses of insecticides against, **256**, **285**, **451**, **495**, **496**; preference of, for plants sprayed with wetting agents, **300**.

N.

Nacoleia diemenalis, found in New Zealand in aircraft from Pacific Is., **158**.
naevana, *Rhopobota*.
Nagusta, predacious on *Oxycarenus* spp. in Uganda, **502**.
nana, *Trichogrammatoidea*.
Naphthalene, repellent to *Attagenus megatoma*, **344**.
1-Naphthyl N-Methylcarbamate (see Sevin).
napi, *Ceutorhynchus*.
Napier Grass (see *Pennisetum purpureum*).
Naranga aenescens, types of seasonal development of, on rice in Japan, **321**.
nararia, *Natada*.
narayani, *Chelonus*.
Narcissus, bulletin on pests of, in Britain, **509**; treatments of bulbs of, against *Merodon equestris*, **464**, **465**.
nasturtii, *Aphis*; *Contarinia*.
Nasutitermes arboreus, in Ivory Coast, **459**; influence of humidity on, **459**.
Nasutitermes exitiosus, testing of methods for protecting timber from, in Australia, **479**.
Natada nararia, virus disease of, on tea in Ceylon, **198**.
Neanastatus tenuis var. *platygasteri*, n., parasite or hyperparasite of *Pachydiplosis oryzae* in French Cameroons, **30**, **111**.
Nebraska, pests of cereals in, **175**, **179**; *Epitrix tuberis* on potato in, **340**; *Aceria tulipae* transmitting wheat streak mosaic in, **179**.
nebulosus, *Anthribus*; *Deraeocoris*; *Pseudohylesinus*.
Necremnus duplicatus (parasite of *Ceutorhynchus assimilis*), bionomics of, in Idaho, **382**.
Necrobia rufipes, susceptibility of, to pyrethrum in oil, **171**.
Nectarine, *Conotrachelus nenuphar* on, in U.S.A., **353**.
Nematodes, infesting insects, **105**, **290**, **359**, **377**, **398**, **474**.
nemea, *Zenillia* (*Phryxe*).
nemoralis, *Acantholyda* (see *A. pinivora*).
Nemorilla angustipennis, parasite of Lepidoptera in Peru, **454**.
nemorum, *Anthocoris*.
nenuphar, *Conotrachelus*.
Neochelonella (see *Chelonus*).
Neodiprion, taxonomy of, **264**.
Neodiprion abbotii, on *Pinus taeda* in Virginia, **265**; synonymy of, **264**.
Neodiprion americanus, a synonym of *N. abbotii*, **264**; *N. taedae* recorded as, **264**.
Neodiprion dyari (see *N. pratti*).
Neodiprion excitans, on *Pinus echinata* in Virginia, **265**.

Neodiprion hetricki, sp. n., on *Pinus taeda* in Virginia, **264, 265.**
Neodiprion insularis, known only from Cuba, **264.**
Neodiprion lecontei, *Dahlbominus fuscipennis* reared on, **331**; odour of, as factor in host selection by *Sturmia bohemica*, **127.**
Neodiprion pratti, on *Pinus taeda* in U.S.A., **264, 265**; synonymy and subspecies of, **265.**
Neodiprion pratti banksianae, on *Pinus banksiana* in Canada and U.S.A., **265**; cycle of development of polyhedral virus in, **497.**
Neodiprion pratti paradoxicus, subsp. n., on pines in U.S.A., **265.**
Neodiprion sertifer (on pine), in Belgium, **404**; parasite of, in Yugoslavia, **288**; holarctic distribution of, **264**; winter dormancy in eggs of, **404.**
Neodiprion taedae, sp. n., on *Pinus taeda* in Virginia, **264, 265.**
Neodiprion taedae linearis, subsp. n., on *Pinus taeda* in U.S.A., **264.**
Neodiscodes martinii, parasite of *Pseudococcus njalensis* in Ghana, **164.**
Neoleucopis (see *Leucopis*).
Neomysia oblongoguttata, predacious on *Chermes piceae* in Austria, **201.**
Neorhizoecus coffeae, insecticides against, on coffee in Venezuela, **499.**
Neo-Tarsol, **462.**
Neotermes tectonae, factors affecting infestation of teak by, in Java, **319.**
Neotran (see Di(p-chlorophenoxy)methane).
Nepal, *Calandra* spp. in stored grain in, **208, 209.**
Nephelodes emmedonia, virus diseases of, in U.S.A., **386.**
Nephotettix apicalis var. *cincticeps*, transmitting rice stunt virus in Philippines, **35.**
Nerium oleander, Coccids on, in Bermuda, **268, 416.**
Nesocypselas piperica, sp. n., on *Piper nigrum* in New Britain, **357.**
neustria, *Malacosoma.*
Nevada, *Myzocallis maculata* in, **226.**
nevadensis, *Zootermopsis.*
New Britain, new Coreid on cacao in, **413**; new Tingid on *Piper nigrum* in, **357.**
New Brunswick, *Frankliniella vaccinii* on blueberry in, **193**; Cicadellids and virus disease of celery in, **388**; forest pests in, **126, 127, 265, 269, 270, 314, 331, 332, 391, 483, 485**; natural enemies and biological control of insects in, **127, 270, 485**; virus disease of *Gilpinia hercyniae* in, **485.**
New Caledonia, Coccids of, **278**; lists of pests in, **158**; insects in aircraft arriving in New Zealand from, **158.**
New Guinea, *Cryptotermes dudleyi* in, **503**; new insects on crop plants in, **106, 412, 413**; parasite of new Melolonthid in, **106.**
New Hebrides, insects in aircraft arriving in New Zealand from, **158.**
New Ireland, new Coreid possibly occurring in, **413.**
New Jersey, *Cydia molesta* and its parasites on peach in, **93, 237**; *Lymantria dispar* in, **426**; *Tetranychus telarius* in, **57, 439.**
New Mexico, *Myzocallis maculata* on lucerne in, **177**; *Dissosteira longipennis* in, **309.**
New South Wales, *Aphodius howitti* in pastures in, **377**; *Amblypelta nitida* on peach in, **412**; pests of pulses in, **322**; insects and virus disease of *Trifolium subterraneum* in, **31**; *Chortoicetes terminifera* in, **411**; new bacterium infecting *Heteronychus sanctae-helenae* on maize in, **191.**
New York, forest pests in, **126, 183, 218, 259, 347, 426, 488**; *Amphimallon majalis* in grassland in, **220**; pests of leguminous crops in, **51, 62, 63, 229**; *Macrosteles fascifrons* and virus disease of lettuce in, **96**; orchard pests in, **76, 180, 354, 445**; *Listronotus oregonensis* on parsley in, **181**; *Pyrausta nubilalis* injuring potatoes in, **231**; *Frankliniella tritici* on rose in, **94**; *Erythroneura comes* on vines in, **337**; insects and fungi in imported pepper in, **339**; beneficial insects in, **183, 259.**
New Zealand, pests of crucifers in, **255, 256, 360, 372, 373, 374**; *Paropsis dilatata* on *Eucalyptus* in, **479, 480**; pests of grasses in, **257, 258, 359, 360**; pests of ornamental plants in, **33, 373**; *Nysius huttoni* on wheat in, **372**; natural enemies and diseases of insects in, **359, 360, 373**; aircraft carriage of insects between Pacific Islands and, **158, 507.**
Newfoundland, outbreaks, parasites and disease of *Lambdina fiscellaria* in, **128**; *Stilpnotia salicis* on poplar and its biological control in, **126, 127.**
newsteadi, *Lepidosaphes.*
Nezara viridula, strain of *Trichopoda pennipes* parasitising, in U.S.A., **437.**
ni, *Trichoplusia.*
Niagara 908, unsatisfactory in sprays against *Panonychus ulmi*, **261.**
Nicaragua, new Cicadellid on beans and squash in, **310.**

Nickel Arsenate or Bichromate, as wood preservative against termites, **199.**
Nicotiana spp., used in experiments with insects and virus diseases, **492, 498.** (See Tobacco.)
Nicotine, risk of using, in mixed dust against *Solubea poecila*, **120;** spraying with, against other insects, **78, 115;** low toxicity of, to stored-product beetles, **236;** *Bracon gelechiae* killed by, in tobacco-fed hosts, **13.**
Nicotine Sulphate, in sprays: against *Diarthronomyia chrysanthemi*, **373;** toxicity of, to *Drosicha stebbingi*, **470;** against Lepidoptera, **244, 487, 488;** and soap, **244.**
nidulans, Eupteromalus.
niger, Lasius; *Lygocerus.*
Nigeria, pests and virus disease of cacao in, **210, 212, 254;** *Campylomma* on cotton in, **368;** ambrosia beetles infesting timber in, **408;** pests of stored products in, **42, 114, 150, 212, 273;** doubtful possibility of biological control of *Acanthospermum hispidum* in, **188, 189.**
nigeriensis, Bemisia (see *B. tabaci*).
nigra, Saissetia; *Scatopse.*
nigrellus, Attalus.
nigricana, Cydia (*Enarmonia*).
nigricans, Euxoa.
nigricornis, Blaptocampus; *Lobotrachelus*; *Taeniothrips.*
nigrifrons, Graminella.
nigripes, Blondelia.
nigrirostris, Hypera (*Phytonomus*).
nigriventris, Pyrilla perpusilla.
nigrocellulata, Cremifania.
nigrofornicatus, Aphanogmus.
nigromaculatus, Exochomus (see *E. melanocephalus*).
nigroplagiata, Temnoschoita.
nigrorepletus, Hieroglyphus.
Nioro elegantula, parasite of Lepidoptera in French Cameroons, **365.**
Niptus hololeucus, susceptibility of, to pyrethrum in oil, **171.**
Nisia atrovenosa, parasite of *Tettigella spectra* in French Cameroons, **366.**
niso, Gegenes.
nitida, Amblypelta; *Cotinis*; *Saissetia nigra* (see *S. nigra*).
nitidalis, Diaphania.
nitidula, Tarache.
nitidum, Bembidion.
p-Nitrobenzyl p-Chlorophenyl Sulphide, toxicity of, to Tetranychid eggs and larvae, **381.**
p-Nitrobenzyl Phenyl Sulphide, and derivatives, tests of, against Tetranychid eggs and larvae, **381.**
Nitrogen (in plants), content of, in relation to pests, **102, 109, 118, 432, 433, 484;** interactions between insecticides and, **108, 109, 432, 433.**
NIUIF-100, **244.**
nivella, Scirpophaga.
njalensis, Pseudococcus.
nodiceps, Cryptognatha.
Nodonota theobromae, on cacao in Bahia, **318.**
Nomadacris septemfasciata, in N. and S. Rhodesia, **369;** in Tanganyika, **252, 301, 302, 369, 370, 410, 411, 504;** ecological factors affecting development of, in areas of constant breeding, **252, 302, 369, 370, 411;** estimation of populations of adults and hoppers of, **301, 302, 410;** tree-planting trials as measure against, **504.**
Nomia melanderi, pollinating lucerne in Washington, **349;** natural enemies of, **349.**
nonagrioides, Sesamia.
Noorda albizonalis, on mango in Orissa, **163.**
nordmannianae, Chermes.
Norta altissima, Circulifer tenellus on, in Idaho, **122.**
Norway, mite on apple in, **37;** *Psila rosae* on carrot in, **36;** Aphids and virus diseases of potato in, **307, 308;** forest pests in, **243, 320;** *Anobium punctatum* in timber in, **463;** beneficial insects in, **36, 243, 463.**
Nosema cacoeciae, sp. n., infecting *Choristoneura murinana* in Czechoslovakia, **398.**
Nosema murinanae, sp. n., infecting *Choristoneura murinana* in Czechoslovakia, **398.**
notatus, Monochamus; *Pissodes.*
Notiphila sekiyai, bionomics and control of, on rice in Japan, **423.**
Notostira erratica, uptake of dust deposits by, **41.**
Nova Scotia, *Frankliniella vaccinii* on blueberry in, **193;** Lepidoptera on forest trees in, **11, 126, 127;** orchard pests in, **87, 190, 267;** introduced Tipulid in, **483;** wireworms in, **11, 483;** natural enemies of pests in, **11, 127, 190, 267.**
noxia, Ctenicera pruinina.
noxium, Dermolepida.
NPD (see Tetra-n-propyl Dithionopyrophosphate).
nubilalis, Pyrausta.
numismatica, Toumeyella.
nüsslini, Chermes (*Dreyfusia*) (see *C. nordmannianae*).
Nyasaland, new Pyralid in, **172.**

Nygmia phaeorrhoea (see *Euproctis chrysorrhoea*).
Nylon, use of plastic coated, in fumigation against termites, **89.**
Nymphula depunctalis (on rice), in French Cameroons, **365**; spray against, in Malaya, **277.**
Nymphula stagnalis (see *N. depunctalis*).
Nysius huttoni, bionomics of, in New Zealand, **372**; effect of damage by, on wheat and crucifers, **372.**

O.

Oak (*Quercus*), *Lymantria dispar* on, in Azerbaijan Republic, **68, 69**; Geometrids on, in Canada, **11**; *Platypus cylindrus* on, in Germany, **78**; Tetranychid on, in Japan, **153**; *L. dispar* on, in Spain, **294, 295**; experiments with Nitidulids and wilt fungus of, in U.S.A., **17**; Lepidoptera on, in Yugoslavia, **3**; differences in development of *L. dispar* on species of, **3, 68**; experiments with *Malacosoma neustria* and, **3.**
Oak Wilt (see *Endoconidiophora fagacearum*).
Oats, factors affecting damage to, by *Lema melanopa* in Bulgaria, **118**; *Delphacodes pellucida* on, in Finland, **405**; *Oscinella frit* on, in Sweden, **243**; forms of *Oscinella frit* on, in U.S.S.R., **80, 81**; Aphids on, in U.S.A., **18, 19, 178, 341**; Aphids transmitting virus disease of, **18, 19**; experiments with forms of *O. frit* and, **81, 243**; varieties of, in relation to pests, **243, 341**; used for rearing *Euscelis lineolata*, **146.**
Oats (Stored), pests in, **173**; effect of methyl-bromide fumigation on germination of, **324.**
obesa, Amara.
obliterata, Aphidecta.
oblongoguttata, Neomysia.
oblongum, Platysoma.
obovatus, Brevipalpus (*Tenuipalpus*).
obscura, Leucopis (*Leucopomyia, Neoleucopis*).
obscurellus, Triaspis (*Sigalphus*).
obscurus, Agriotes; *Anaphothrips*; *Hylastes* (*Hylastinus*); *Tenebrio.*
obsoleta, auct., *Heliothis* (*Chloridea*) (see *H. armigera*).
obsoletus, auct., *Acanthoscelides* (see *A. obtectus*).
obtectus, Acanthoscelides.
occidentis, Winthemia.
ocellana, Spilonota.
ocellatella, Gnorimoschema (*Phthorimaea*).
ochrogaster, Euxoa.
N-Octyl Bicycloheptene Dicarboximide (see N-(2-Ethylhexyl)bicyclo[2.2.1]-5-heptene-2,3-dicarboximide).
Odites semibrunnea, sp. n., on coffee in Kenya, **166.**
Oecanthus indicus, insecticides against, on tobacco in Philippines, **107, 154.**
Oecophylla longinoda, effect on, of sprays against mealybug-tending ants in Ghana, **211.**
Ohio, *Hylastes obscurus* on clover in, **217**; orchard pests in, **58, 59, 76, 260, 434**; *Popillia japonica* in, **231.**
Oiketicoides bipars, on tea in India, **114.**
Oil Emulsions, against *Aleurothrixus floccosus*, **454**; against Coccids, **5, 26, 28, 97, 116, 232, 274, 297, 395, 396, 433**; against *Tortrix rosana*, **6**; against mites, **34, 37, 138, 224, 225, 354, 355, 386, 403, 404**; types of oil for, **34, 95, 97, 182, 354, 395, 396, 433**; and Aramite, **232**; and BHC, **116, 396**; and DDT, **55, 97, 116, 244, 337, 396**; and other chlorinated insecticides, **297, 337**; and 2,4-dichlorophenoxyacetic acid, **182**; and DNC, **37, 404**; ethylene dibromide in, **218**; and malathion, **97, 297, 354, 433**; and parathion, **139, 234, 284, 297, 337, 354, 396, 397, 404, 433, 454, 456**; and other phosphorus compounds, **274, 337**; and tar distillate, **403**; maize injured by, **55**; effect of, on quality and yield of *Citrus* fruits, **95, 182, 433.**
Oils, insecticides applied from aircraft in, **71, 300, 391, 412, 488, 506**; estimation of spray deposits of insecticides in, **12**; treatments of logs and trees with insecticides in, **218, 409**; toxicity of pyrethrum and, to stored-product insects, **171, 172, 352.**
Oils, Essential (see Angelica and Cedar Oils).
Oils, Vegetable (see Groundnut, Linseed and Maize Oils).
Oklahoma, pests of cereals in, **100, 178, 219, 341**; *Trogoderma inclusum* in stored grain in, **334**; insects and virus disease of watermelon in, **18**; *Dissosteira longipennis* in, **309**; egg-parasite of *Zeadiatraea grandiosella* in, **100.**
Okra (see *Hibiscus esculentus*).
oleae, Dacus; *Saissetia.*
Oleander (see *Nerium oleander*).
olearius, Brevipalpus.
oleivora, Phyllocoptruta.
Oleoparathion, **396, 397.**
oleraceus, Diospilus.
olethrius, Brachymeria.

Oligonychus, on coconut and maize in Mauritius, **167.**
Oligonychus afrasiaticus, on date palm in Libya, **297.**
Oligonychus biharensis, on fruit trees and camphor in Mauritius, **167.**
Oligonychus coiti (see *O. punicae*).
Oligonychus mangiferus, on fruit trees in Mauritius, **167.**
Oligonychus pratensis, **167;** arthropods predacious on, on cereals and *Chloris gayana* in Texas, **310, 311.**
Oligonychus punicae, sprays against, on mango in Florida, **386.**
Oligonychus yothersi, test of Triton X-160 against, on avocado in Florida, **386.**
Olive, pests of, in Egypt, **25, 28;** *Dacus oleae* on, in Greece, **467;** *Orthezia insignis* on, in Peru, **136;** *D. oleae* on, in Yugoslavia, **5;** question of diazinon residues in fruits of, **467.**
Olive-tree Scale (see *Leucodiaspis riccae*).
Olla abdominalis, destroying *Oligonychus pratensis* in Texas, **311.**
Omnivorous Leaf-roller (see *Platynota stultana*).
omnivorus, Psychophagus.
Oncocephala tuberculata, bionomics of, on sweet potato in Java, **477, 478;** parasites of, **478.**
Oncometopia undata, transmitting Pierce's disease of vines in Florida, **494.**
Oncopeltus fasciatus, toxicity of paraoxon to, **231;** effect of parathion on esterase in eggs of, **51;** groundnuts as food for, **233.**
Oncopera fasciculata, ecological factors affecting, in pastures in South Australia, **377–379;** natural enemies of, **377, 378.**
Oncopera intricata, sprays against, in pastures in Tasmania, **75.**
Onion, *Thrips tabaci* on, in Australia, **478;** *Hylemyia antiqua* on, in Canada, **389;** *H. antiqua* on, in France, **283;** pests of, in U.S.A., **349, 430, 431;** stage of development of, in relation to *H. antiqua*, **283;** insecticide seed treatments of, **389.**
Onion Maggot (see *Hylemyia antiqua*).
Oniscus asellus, small effect of temperature on permeability of cuticle of, **83.**
ononidis, Myzocallis (*Therioaphis*).
Ononis, Myzocallis ononidis on, in Italy, **230.**
Ontario, *Psila rosae* on carrot in, **316;** insects and virus disease of celery in, **388;** pests of crucifers in, **191, 192, 193;** forest pests in, **12, 129, 188, 315, 316, 347, 348, 390, 391, 481, 482, 485;** Scolytids and Dutch elm disease in, **387, 483;** *Drosophila* spp. and fungi infesting peaches in, **22;** pests of squash in, **23;** *Ancylus comptana* on strawberry in, **131;** tomato pests in, **266, 389;** *Limonius agonus* in, **130, 423;** beneficial insects in, **87, 88, 129, 130, 133, 188, 191, 315, 316, 390, 391;** study of chemical aspects of crop environments in, **199.**
Ooencyrtus kuvanae, introduced parasite of *Lymantria dispar* in Spain, **294;** bionomics of, **294, 295.**
Ooencyrtus masii, parasite of Lepidoptera in Spain, **294.**
oophilus, Opius.
Ootetrastichus pallidipes, parasite of Delphacids in Mauritius, **371.**
opacicollis, Anomala.
operculella, Gnorimoschema.
Operophtera brumata, experiments with virus disease of *Vanessa cardui* and, in Britain, **198;** estimation of populations of, on *Quercus borealis* in Nova Scotia, **11.**
Ophiola flavopicta, transmitting virus disease of potato and leguminous plants in Japan, **35.**
Ophiola vaccinii (see *Scleroracus*).
Opius annulicornis, parasite of *Diopsis* spp. in French Cameroons, **30.**
Opius fletcheri, host-fruit affecting control of *Dacus cucurbitae* by, in Hawaii, **508.**
Opius oophilus, parasite of *Dacus dorsalis* in Hawaii, **90.**
oppositum, Bembidion quadrimaculatum.
oppositus, Phygadeuon.
optabilis, Paranagrus.
orana, Adoxophyes.
Orange, *Dacus tryoni* on, in Australia, **374;** *Ceratitis capitata* on, in Costa Rica, **121;** pests of, in Israel, **275;** pests of, in U.S.A., **225, 233, 429, 433;** (fruits), method of artificial infestation of, with *Dacus tryoni*, **374;** juice crystals of, in diet for adults of *Anastrepha ludens*, **184;** injured by sulphuryl-fluoride fumigation, **88;** effect of oil emulsions on quality of, **182;** spray residues in, **183, 234.**
Orange, Tangerine, *Brevipalpus lewisi* on, in U.S.A., **429.**
Orange-bug, Bronze (see *Musgraveia sulciventris*).
Oregma lanigera, insecticides against, on sugar-cane in Philippines, **354.**
Oregon, forest pests in, **347, 348, 488, 489;** *Liothrips vaneeckei* on *Lilium longiflorum* in, **235;** *Macrosteles fascifrons* transmitting virus disease of

potato in, **492**; pests of stored grain in, **173**.
oregonensis, Listronotus.
Oria musculosa, bionomics, parasites and control of, on cereals in France, **205**.
orichalcea, Plusia.
Oriental Fruit Moth (see *Cydia molesta*).
Oriental Fruit-fly (see *Dacus dorsalis*).
orientalis, Anomala; *Blatta.*
oriphila, Trichopria.
Orius insidiosus, predacious on *Oligonychus pratensis* in Texas, **311**.
Orius laevigatus, predacious on Tetranychid in Egypt, **27**.
Orius tristicolor, predacious on *Platynota stultana* in California, **383**.
ornatus, Diplazon.
ornigis, Apanteles.
ornithogalli, Prodenia.
Orosius argentatus, in Australia, **31**; bionomics and control of, in Java, **477**; relation of, to virus diseases of leguminous plants, **31, 477**.
Orphulella punctata, denuding grazing lands in Uruguay, **406**.
Orthezia, new Chamaemyiid predacious on, on *Euphorbia* and lime in Grenadines, **136**.
Orthezia insignis, bionomics and control of, in Egypt, **27**; new Chamaemyiid predacious on, on olive, etc., in Peru, **136**.
ortheziavora, Melaleucopis.
Orthocide 50, **107**.
orthogonia, Agrotis.
Oryctes rhinoceros (on coconut in Pacific Islands), bionomics and ecology of, **157**; Fijian predators of, **106**; introduction of natural enemies and diseases against, **105, 106, 158, 191**; other measures against, **105, 157, 158**.
oryctophaga, Scolia.
Oryza barthi, rice pests on, in French Cameroons, **111**.
Oryza sativa (see Rice).
oryzae, Calandra (*Sitophilus*); *Chlorops*; *Echinocnemus*; *Latheticus*; *Pachydiplosis.*
Oryzaephilus mercator, infesting stored groundnuts in Nigeria, **273**; distinct from *O. surinamensis*, **166**.
Oryzaephilus surinamensis, in imported groundnuts in Canada, **132**; in Nigeria, **150**; in stored cereals in Oregon, **173**; effects of cracked grains and presence of *Calandra oryzae* on reproduction of, **312**; fumigants against, **88, 132**; other measures and experiments against, **150, 172**; *O. mercator* distinct from, **166**.
oryzophilus, Lissorhoptrus.
Osbornellus borealis, on myrtle and privet in California, **445**; experimentally transmitting virus disease of peach and celery, **445**.
Oscinella frit, on lawns in Rhode Island, **236**; factors affecting oviposition by, on oats in Sweden, **243**; status and distribution of biological forms of, on cereals and grasses in U.S.S.R., **80, 81**.
Oscinella frit f. *pusilla*, status and distribution of, on cereals and grasses in U.S.S.R., **80, 81**.
oslari, Hemerocampa.
Ostrya carpinifolia, experiment with, as food-plant for *Lymantria dispar* in Yugoslavia, **3**.
Otiorhynchus ligustici, on beet in Bulgaria, **328**.
otus, Pachypasa.
Ovamite, Ovex or Ovotran (see p-Chlorophenyl p-Chlorobenzene Sulphonate).
Oxycarenus, bionomics and relation to cotton of species of, in Uganda, **502**; Reduviid predacious on, **502**; measures against, **502**.
Oxycarenus dudgeoni, **502**.
Oxycarenus fieberi, **502**.
Oxycarenus rufiventris, on *Hibiscus cannabinus* in Uganda, **502**.

P.

Pachyceras xylophagorum, bionomics of, parasitising *Ips* in Alberta, **269**.
Pachydiplosis oryzae, on rice in French Cameroons, **29, 30, 110, 111, 365**; bionomics of, **111**; parasites of, **30, 111**.
pachydiplosisae, Tetrastichus.
Pachylophus, on rice in French Cameroons, **30, 111, 365**; bionomics of, **111**; parasites of, **30, 111**.
Pachylophus lugens, **30, 111**.
pachylophusae, Aprostocetus (*Tetrastichus*).
Pachymerus acaciae, cassiae, fuscus, gonagra and *longus* (see *Caryedon*).
Pachynematus, Pikonema congeneric with, **302**.
Pachynematus pallescens, observations on, on spruce in Germany, **398**.
Pachynematus styx, sp. n., on *Picea abies* in Germany, **302**.
Pachyneuron, parasite of *Bruchophagus caraganae* in Canada, **189**.
Pachypasa otus, bionomics and control of, on pistachio in Syria, **238**.

Pachyrhynchus moniliferus, sprays against, on cacao in Philippines, **107.**
Pacific Islands, authorship of paper on biological control in, **155.**
pacificus, *Hyposoter fugitivus*; *Tetranychus.*
Packaged Foods, tests of treatments of, against insects, **353, 362.**
Paddy (see Rice).
Paddy Bug (see *Solubea poecila*).
Paddy Root Weevil (see *Echinocnemus oryzae*).
padellus, *Hyponomeuta*; *Myzus.*
padi, *Anuraphis.*
Pagiocerus fiorii, bionomics of, in stored maize in Ecuador, **98.**
Pagiocerus frontalis, *P. fiorii* recorded as, in Ecuador, **98.**
Pakistan, *Aleurocanthus woglumi* and its natural enemies in, **72, 73**; *Schistocerca gregaria* in, **160.**
Pales pavida, parasite of *Ennomos quercinaria* in Germany, **78.**
palitans, *Praon.*
pallescens, *Pachynematus.*
palliatus, *Hylastes* (*Hylurgops*); *Tanymecus.*
pallida, *Scyllinops.*
pallidicornis, *Chirothrips.*
pallidicosta, *Ampycodes* (see *Maliarpha separatella*).
pallidipes, *Ootetrastichus.*
pallidus, *Chlorodryinus*; *Creontiades*; *Steneotarsonemus* (*Tarsonemus*).
palmarum, *Cybocephalus.*
palpalis, *Glossina.*
palpebrator, *Bracon* (*Habrobracon*).
paludosa, *Tipula.*
Pammene rhediella, bionomics and parasites of, on fruit trees in Switzerland, **469.**
Panama Canal Zone, new species of *Empoasca* in, **310**; tests of wood preservatives against termites in, **199.**
Pandanus, *Agonia fuscipes* on, in India, **323.**
paniceum, *Stegobium.*
Panicum geminatum, *Solubea poecila* on, in British Guiana, **119.**
Panicum maximum, Noctuids on, in Uganda, **303, 304.**
panisca, *Empoasca.*
Panolis flammea, *Trichogramma embryophagum* parasitising, in central Europe, **399.**
Panonychus, *Metatetranychus* congeneric with, **153.**
Panonychus citri (*mori*), on mulberry in Japan, **153**; sprays against, on *Citrus* in U.S.A., **224, 233, 433**; influence of season and weather on populations of, **224**; as food for larvae of *Chrysopa lateralis*, **312**; synonymy of, **153.**
Panonychus (*Metatetranychus*) *ulmi* (on fruit trees) in Britain, **325**; in Canada, **85, 267, 268, 483**; in Egypt, **28**; in France, **139**; in Germany, **203, 402, 403**; in Holland, **463**; in Italy, **403**; in Norway, **37**; in U.S.S.R., **285**; in U.S.A., **102, 260, 281, 282, 354**; bionomics of, **483**; effect of nitrogen content of apple leaves on, **102**; mites predacious on, **85, 203, 267, 268, 402, 403**; sprays against, **37, 139, 260, 281, 282, 285, 325, 354, 403, 463**; parathion-resistant strain of, **260, 261**; systematic position of, **153.**
Papaya, *Pseudaulacaspis pentagona* on, in Dutch Guiana, **318**; *Dacus dorsalis* on, in Hawaii, **90**; *Aleurocanthus woglumi* on, in Pakistan, **73**; *Amblypelta* spp. on, in Solomon Islands, **412, 413**; *Pseudaulacaspis pentagona* on, in Trinidad, **268.**
papuensis, *Amblypelta lutescens.*
parabile, *Trogoderma.*
paradoxicus, *Neodiprion pratti.*
paraensis, *Azteca.*
Paralitomastix polyphaga, parasite of *Epilachna similis* in French Cameroons, **365.**
Paralobesia piceana, reducing seed production of *Picea glauca* in Canada, **188.**
Paralobesia viteana, sprays against, on vines in Pennsylvania, **342.**
Paranagrus optabilis, parasite of Delphacids in Mauritius, **371.**
Paraoxon, toxicity of, to insects and rats, **231.**
Paratetranychus pilosus (see *Panonychus ulmi*).
Paratheresia claripalpis (parasite of sugarcane moth borers), establishment of, in Guadeloupe, **135**; attempted introduction into Malaya against rice stem-borers, **73, 74**; utilisation of, in Peru, **500, 501**; in Trinidad, **134, 135**; insect parasites of, **135, 401**; fungus infesting, **501.**
Parathion, against Aleyrodids, **73, 108, 109, 454**; against Aphids, **48, 49, 124, 139, 175, 256, 285, 341, 386, 493, 496**; resistance to, in strains of *Myzocallis maculata*, **124**; against Cicadellids, **337, 444**; against Coccids, **5, 26, 28, 89, 90, 103, 112, 284, 285, 297, 299, 386, 396, 397, 433, 486**; against other Hemiptera, **34, 35, 107, 245, 405**; against Curculionids, **84, 141, 142, 219, 438, 441, 462**; against other Coleoptera, **59, 60, 112, 349**;

against Cecidomyiids, **249, 362, 373, 456;** against fruit-flies, **5, 90, 91, 217, 508;** against other Diptera, **271, 322, 434;** against Noctuids, **48, 49, 92, 95, 107, 188, 295, 342, 425;** against other Lepidoptera, **6, 14, 34, 35, 56, 78, 95, 106, 107, 131, 195, 219, 221, 242, 244, 321, 323, 330, 445, 469, 487;** against *Macrotermes goliath*, **151;** against *Phaneroptera furcifera*, **107;** against *Sminthurus viridis*, **31, 278;** against Thysanoptera, **6, 235, 331, 349, 366, 478;** against mites, **32, 34, 45, 48, 49, 50, 58, 74, 85, 138, 176, 260, 261, 274, 354, 404, 428, 429, 442, 463;** favouring infestation by mites, **106;** ineffective against *Halotydeus destructor*, **31;** strain of *Panonychus ulmi* resistant to, **260, 261;** effects of, on beneficial arthropods, **85, 94;** laboratory tests of toxicity of, to insects, **7, 10, 49, 94, 107, 112, 174, 217, 219, 236, 285, 286, 319, 330, 408, 420, 470, 486, 496;** vapour action of, **330;** effect of, on cholinesterase of insect eggs, **51, 254;** effects of, on plants, **74, 84, 109, 139;** affecting juice quality of oranges **182;** not translocated in beet plants, **496;** weather reducing effectiveness of deposits of, **49;** in bait-sprays, **90, 91;** in baits, **59, 141, 142;** in dusts, **14, 28, 45, 50, 58, 59, 92, 112, 174, 176, 195, 271, 362, 405, 408, 438, 462, 478, 486, 487;** in granules, **56, 434, 441;** in sprays, **5, 6, 10, 26, 32, 34, 35, 45, 48, 49, 58, 73, 74, 78, 84, 85, 89, 90, 95, 103, 106, 107, 109, 112, 124, 131, 138, 139, 175, 176, 182, 188, 195, 217, 219, 221, 233, 235, 242, 244, 245, 249, 256, 260, 261, 274, 284, 285, 295, 297, 299, 319, 322, 323, 330, 331, 337, 341, 342, 349, 366, 373, 386, 396, 397, 404, 405, 420, 425, 429, 433, 434, 442, 444, 445, 454, 456, 463, 469, 470, 478, 486, 487, 493, 496, 508;** applied from aircraft, **95, 188, 425, 486;** soil treatments with, **59, 60, 91;** treatment of pineapple suckers with, **112;** and Aramite, **182, 234;** and calcium arsenate, **438;** and charcoal, **84;** and DDT, **50, 92, 152, 278, 487;** and dieldrin, **331, 349;** and 2,3-p-dioxandithiol S,S-bis(O,O-diethyl phosphorodithioate), **429;** and Kelthane, **234, 429;** and methyl-parathion (see also Metacide), **245;** and oil emulsions, **139, 234, 284, 297, 337, 354, 396, 397, 404, 433, 454, 456;** and sulphur, **233, 429, 438;** and Triton X-160, **386;** other agents in sprays containing, **233, 234, 337;** proprietary preparations of, **5, 73, 244, 396, 487.**

pardalina, Locustana.

Pardasena virgulana, parasite of, on *Cajanus cajan* in Mauritius, **421.**

Paremydica, on *Cola* in French West Africa, **407.**

Parerupa (*Diatraea, Proceras*) *africana*, identity and systematic position of, **172;** occurrence, parasites and doubtful identity of moth recorded as, on rice in French Cameroons, **29, 30, 365.**

Parerupa diagonalis (see *P. africana*).

Paris Green, against *Trichoplusia ni* on cotton, **443;** in baits for other insects, **388, 483.**

Parlatoria blanchardii, bionomics, natural enemies and control of, on date palms in North Africa, **296, 297.**

Paropsis dilatata, on *Eucalyptus* in New Zealand, **479, 480.**

Parornix geminatella, natural enemies of, on apple in Virginia, **447, 487;** sprays against, **487, 488;** not affected by endrin sprays against mice, **447, 487.**

Parorphula graminea, denuding grazing lands in Uruguay, **405.**

Parsley, *Listronotus oregonensis* on, in U.S.A., **181;** malathion residues on, **232, 233.**

Parsnip, *Tiphia* spp. attracted to, in Hungary, **68;** effect of insecticide seed treatments on, **20, 21.**

parva, Tacebia.

parvula, Mordellistena.

Paspalum conjugatum, Solubea poecila on, in British Guiana, **119.**

passiflorae, Dacus.

Patata (see *Monolepis nuttalliana*).

patellana, Halticoptera.

paucispina, Dicladispa.

pavida, Pales (*Ctenophorocera*).

Pea, *Macrosiphum pisum* on, in Canada, **484;** pests and virus disease of, in Holland, **329, 330;** *Ceresa bubalus* on, in Moldavia, **245;** *Heliothis armigera* on, in New South Wales, **322;** *M. pisum* on, in U.S.A., **50;** factors in resistance to *M. pisum* of varieties of, **484;** residues from insecticide treatments of, **33, 329, 330;** effect of rearing *Callosobruchus maculatus* on seeds of, **25.**

Peach, *Amblypelta nitida* on, in Australia, **412;** *Thrips fuscipennis* on, in glasshouses in Britain, **456;** insects associated with, in Canada, **22, 87;** pests of, in France, **6, 7, 77, 138, 139;** *Myzus persicae* on, in Germany, **194, 195;** Tetranychids on, in Mauritius, **167;** *Tetranychus kanzawai* on, in Japan, **153;** pests of, in U.S.A., **76, 90, 93,**

219, 234, 237, 281, 343, 353, 434, 444, 494, 497; Cicadellids and virus diseases of, **444, 445, 494, 496, 497**; (fruits), insects disseminating fungi infesting, **22, 494**; types of injury by Pentatomids to, **434**; contamination of, by insecticides, **232, 281.**
Peach Aphis, Green (see *Myzus persicae*).
Peach Tree Borer (see *Aegeria exitiosa*).
Pear, pests of, in Egypt, **24, 28**; pests of, in France, **7, 77, 139, 395, 396**; *Scolytus rugulosus* on, in Germany, **202**; *Panonychus ulmi* on, in Italy, **403, 404**; *Tetranychus kanzawai* on, in Japan, **153**; Lepidoptera on, in Switzerland, **205, 293, 469**; pests of, in U.S.A., **89, 90, 281, 282, 448**; *Caliroa limacina* on, in Yugoslavia, **397**; (fruits) insecticides affecting flavour of canned, **281, 282.**
Pear Leaf Blister Mite (see *Eriophyes pyri*).
Pecan, *Enarmonia caryana* on, in U.S.A., **350.**
Pectinigeria, on maize in Uganda, **303.**
Pectinophora (see *Platyedra*).
pedatoria, *Eupelmella*.
Pediculoides, bionomics of, destroying *Ips* spp. in Alberta, **333**; *Uropoda fallax* attacking, **333.**
Pediobius furvus, parasite of *Sesamia* in French Cameroons, **365.**
Pediobius mediopunctatus, parasite of *Epilachna similis* in French Cameroons, **365.**
Pegohylemyia (see *Hylemyia*).
Pegomyia hyoscyami var. *betae*, effect of weather on, on beet in France, **194.**
pellucida, *Camnula*; *Delphacodes*.
pelmatoprocta, *Thecocarcelia*.
Pelopidas mathias, parasites of, on rice in French Cameroons, **365.**
penetrans, *Macroglenes*.
Penicillium chrysogenum, **458.**
pennatula, *Psalis*.
pennipes, *Trichopoda*.
Pennisetum purpureum, Lepidoptera on, in Uganda and S. Rhodesia, **303, 304, 364.**
Pennisetum typhoides, Lepidoptera on, in Uganda and India, **303, 474.**
Pennsylvania, *Hypera variabilis* in, **428**; *Lymantria dispar* in, **426**; *Magicicada septendecim* in, **448**; *Paralobesia viteana* in, **342.**
pensylvanica, *Epicauta*.
Pentachlorophenol (against termites), soil treatment with, **225**; treatment of wood with mixture of BHC and, **151.**
pentagona, *Pseudaulacaspis*.
Pentatoma rufipes, predacious on *Lymantria monacha* in Yugoslavia, **397.**
Pentatrichopus (see *Capitophorus*).
Pentilia castanea, predacious on *Pseudaulacaspis pentagona* in Dutch Guiana, **318.**
Pentilia insidiosa, predacious on *Pseudaulacaspis pentagona* in Trinidad, **269**; failure to establish, in Bermuda, **269.**
N-Pentylphthalimide, as repellent on packaging materials, **353.**
Pentzia, *Loxostege frustalis* on, in South Africa, **251.**
Peosina mexicana, on cacao in Bahia, **318.**
Peppers (see *Capsicum* and *Piper nigrum*).
Pepperweed, Perfoliate (see *Lepidium perfoliatum*).
Peregrinus maidis, on sugar-cane in Mauritius, **371.**
Peridroma saucia (*margaritosa*), virus diseases of, in U.S.A., **386.**
perihirta, *Megachile*.
Perilampus rostratus, sp. n., parasite of *Macrocentrus maraisi* in South Africa, **110.**
Perileucoptera (see *Leucoptera*).
Periodical Cicada (see *Magicicada septendecim*).
Periplaneta americana, mortality of, at low temperatures, **235**; effect of temperature on permeability of cuticle of, **83**; susceptibility of, to sulphuryl-fluoride fumigation, **88**; used in studies of anti-enzyme activity and metabolism of phosphorus compounds, **96, 179**; preparations for studies of nerve activity of, **508.**
Perkinsiella saccharicida, bionomics and natural enemies of, on sugar-cane in Mauritius, **371, 372**; *Glomerella tucumanensis* favoured by, **371.**
Perlite, as granular carrier for DDT, **56.**
perniciosus, *Quadraspidiotus*.
perpusilla, *Pyrilla*.
perroti, *Ips*.
perseae, *Saissetia* (see *S. nigra*).
Persectania, assisting regeneration of tussock-grass in New Zealand, **360.**
Persia, *Recurvaria pistaciicola* on pistachio in, **238**; *Myzocallis* spp. and parasites of *M. maculata* in, **230, 231.**
persicae, *Myzus* (*Myzodes*).
Persimmon (see *Diospyros kaki*).
Perthane (see Ethyl-DDD).
Peru, pests of *Citrus* and cotton in, **454**; *Orthezia insignis* on olive in, **136**; sugar-cane pests in, **500, 501**; beneficial insects and biological control in, **136, 454, 500, 501**; fungus infesting *Paratheresia claripalpis* in, **501.**

Petrobia harti, *Bdella depressa* predacious on, in Illinois, **47.**
Petrobia latens (in U.S.A.), not transmitting wheat streak mosaic, **179;** *Bdella depressa* predacious on, **47.**
Petrol, as soil fumigant against *Cotinis nitida*, **60.**
Petunia, experiments with insects and virus diseases of, **147, 498.**
Phaeogenes maculicornis, parasite of *Choristoneura murinana* in France, **466.**
phaeorrhoea, *Nygmia* (see *Euproctis chrysorrhoea*).
phaeosema, *Chilo*.
phaia, *Busseola*.
phalaenoides, *Drepanepteryx*.
Phaneroptera furcifera, insecticides against, on tobacco in Philippines, **107, 154.**
Phanerotoma, parasite of *Cydia toreuta* in Ontario, **390.**
Phanerotoma grapholithae, parasite of *Cydia molesta* in New Jersey, **93;** toxicity of insecticides to, **93, 94.**
Phanerotoma laspeyresiae, **390.**
Pharoscymnus, predacious on *Parlatoria blanchardii* in Morocco, **296.**
phaseoli, *Melanagromyza* (*Agromyza*); *Trifidaphis* (see *Smynthurodes betae*).
Phaseolus lathyroides, new bacterium transmitted to beans from, by *Taeniothrips nigricornis* in Queensland, **74, 75.**
Phaseolus mungo, new subspecies of *Amblypelta lutescens* on, in New Guinea, **412;** *Lygus vosseleri* on, in Uganda, **43.**
Phaseolus vulgaris (see Beans).
Phasgonophora sulcata, parasite of *Agrilus anxius* in New Brunswick, **270.**
phasiana, *Anoplocnemis*.
Phenacaspis pinifoliae, sprays against, on conifers in British Columbia, **191, 192.**
Phenothiazine, in sprays against *Cydia pomonella*, **242.**
Phenyl Heterocyclic-methyl Sulphides, tests of, against Tetranychid eggs and larvae, **382.**
1 - Phenyl - 3 - methyl - 5 - pyrazolyl Dimethylcarbamate (see Pyrolan).
Phenyl 2-Phenylethyl Sulphide, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Phenyl Phenylthioloacetate, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Phenyl Thiolobenzoate, and derivatives, tests of, against Tetranychid eggs and larvae, **272.**
Philaenus leucophthalmus, on lucerne or clover in U.S.A., **184, 187, 229;** insecticides against, **141, 184, 187;** systemic action of BHC against, **229.**
philippinensis, *Epilachna*.
Philippines, cacao pests in, **106, 107, 354;** pests of *Citrus* in, **106, 354;** rice pests in, **34, 35, 354;** pests of tobacco in, **107, 154, 354;** pests of other crops in, **354;** insects and virus diseases of plants in, **354.**
Philonthus, feeding on wireworms in Nova Scotia, **11.**
Philopsyche abdominalis (see *Charitopimpla sericata*).
Phleum pratense, *Delphacodes pellucida* on, in Finland, **405;** forms of *Oscinella frit* on, in U.S.S.R., **80;** used for feeding *Limonius agonus*, **423.**
phloeocoptes, *Aceria* (*Eriophyes*).
Phlox gracilis, *Circulifer tenellus* on, in Idaho, **122.**
phoenicis, *Brevipalpus*.
Phoenicococcus marlatti, on date palm in Libya, **297.**
Phorbia (see *Hylemyia*).
Phormia terraenovae, uptake of dust deposits by, **41.**
Phorodon humuli, systemic insecticides against, on hops in England, **115, 116.**
Phosdrin (see Dimethyl 2-Methoxycarbonyl-1-methylvinyl Phosphate).
Phosphine, tests of tablets for fumigation of stored grain with, against insects, **5.**
Phosphorus, on *Cola* in French West Africa, **407.**
Phosphorus, infestation of cereals by *Lema melanopa* reduced by fertilisers containing, **118;** effect of insecticides on content of, in plants, **108, 109, 432, 433;** *Bemisia tabaci* possibly affecting content of, in cotton, **109.**
Phosphorus, Radioactive, insects labelled with, **168, 417;** organophosphorus compounds labelled with, **46, 182, 228, 336.**
Phostex (mixture of bis(dialkyloxyphosphinothioyl) disulphides); tests of toxicity of, to stored-product insects, **236.**
Phostox Tablets, for phosphine fumigation, **5.**
Phryxe (see *Zenillia*).
Phthorimaea (see *Gnorimoschema*).
Phygadeuon oppositus, parasite of *Hylemyia coarctata* in England, **43.**
Phygon XL, **85.**
Phyllocnistis labyrinthella, parasites of, on *Populus tremula* in Norway, **243.**

Phyllocoptruta oleivora (on *Citrus*), acaricides against, in Israel, **274**; in Mauritius, **167**.
Phyllopertha (see *Anomala*).
Phyllophaga (see *Lachnosterna*).
Phyllotreta (on crucifers), virus diseases transmitted by, in Britain, **144**; new hyperparasite of, in France, **283**; aerosols against, in Maryland, **227**.
Phyllotreta atra, cabbage virus not transmitted by, in Germany, **400**.
Phyllotreta undulata, cabbage virus not transmitted by, in Germany, **400**.
phyllotretae, *Mesochorus*.
Phylloxera vitifoliae (*vastatrix*), dimefox not controlling, on vine roots in France, **138**.
Physalis, *Epitrix tuberis* on, in U.S.A., **340**.
Physalis angulata, used in tests of transmission of potato leaf-roll virus by *Myzus persicae*, **495**.
Physalis floridana, used in tests of transmission of potato leaf-roll virus by *Myzus persicae*, **19, 455, 495**.
Physalis minima, *Vasates lycopersici* on, in Queensland, **32**.
Physalis peruviana, *Vasates lycopersici* on, in Queensland, **32**.
Physalospora tucumanensis (see *Glomerella*).
Physcus testaceus, failure to establish, against *Lepidosaphes ficus* in California, **180**.
Phytodecta fornicata, parasite of, on lucerne in Yugoslavia, **4**.
Phytometra gamma (see *Autographa*).
Phytomyza atricornis, parasite of, on *Sonchus oleraceus* in California, **237**.
Phytomyza ilicicola (*ilicis*, auct.), systemic insecticides against, on *Ilex opaca* in Maryland, **97, 98**.
Phytomyza rufipes, cabbage virus not transmitted by, in Germany, **400**.
Phytonomus (see *Hypera*).
Phytophaga carpophaga, reducing seed production of *Picea glauca* in Canada, **188**.
Phytophaga destructor (see *Mayetiola*).
Phytoseius macropilis (predacious on fruit-tree mites), in Germany, **402, 403**; effect of sprays on, in Nova Scotia, **190**; study of hosts and development of, **403**.
Phytoseius spoofi (see *P. macropilis*).
Picea abies, new sawfly on, in Germany, **302**.
Picea engelmanni, *Phenacaspis pinifoliae* on, in British Columbia, **191**; *Choristoneura fumiferana* on, in U.S.A., **488**.
Picea glauca, pests of, in Canada, **86, 188**; *Choristoneura fumiferana* reared on, **347**; experiments with *Lambdina fiscellaria* and, **128**.
Picea rubens, insects infesting wind-thrown, in New York, **126**.
piceae, *Chermes* (*Adelges*, *Dreyfusia*); *Lygocerus*.
piceana, *Paralobesia* (*Polychrosis*).
piceus, *Attagenus* (see *A. megatoma*); *Hylobius*.
Pickleworm (see *Diaphania nitidalis*).
picta, *Cleis*.
pictipes, *Ephialtes*.
pictus, *Cirrospilus*.
Pieris brassicae, virus disease of, in Britain, **198**; cabbage virus not transmitted by, in Germany, **400**; natural and experimental parasitism of eggs of, by *Trichogramma* spp., **399**; experiments with virus of *P. rapae* and, **198**.
Pieris rapae (on crucifers), in Britain, **198**; in Japan, **319**; in New Zealand, **360, 372, 373**; DDT against, in Ontario, **192**; factors affecting diapause in, **319, 320**; parasites of, **373**; occurrence and use of virus diseases of, **198, 360, 373**; experiments with *P. brassicae* and virus of, **198**.
Piesma quadratum, transmitting leaf-crinkle virus of beet in Germany, **67**; factors affecting activity and spread of, **67**.
Piezotrachelus (see *Apion*).
Pigeon Pea (see *Cajanus cajan*).
Pigs, insecticides in fat of, **99, 100**; conversion of aldrin to dieldrin in, **99**.
Pikake (see *Jasminum sambac*).
Pikonema (see *Pachynematus*).
pilleriana, *Sparganothis*.
pilosus, *Paratetranychus* (see *Panonychus ulmi*).
Pimpla, parasite of Lepidoptera in Peru, **454**; parasite of *Alcidodes bruniqueli* in Ubangi, **366**.
Pimpla instigator, parasite of *Ennomos quercinaria* in Germany, **78**.
Pimpla punicipes, parasite of *Cryptophlebia illepida* in Hawaii, **104**.
Pimpla rufata (see *Apechthis*).
Pimpla turionellae, parasite of *Choristoneura murinana* in France, **466**.
Pin Cherry (see *Prunus pennsylvanica*).
Pine (*Pinus*), *Neodiprion sertifer* on, in Belgium, **404**; Coleoptera on, in Britain, **207, 361**; pests of, in Canada, **10, 12, 85, 129, 191, 265, 269, 315, 316, 333, 390, 391, 481, 482, 485**; *Diprion pini* on, in Czechoslovakia, **325**; *Pissodes notatus* on, in Italy,

362; *Ernobius mollis* on, in Queensland, 240; *Hylobius* spp. on, in Sweden, 142; pests of, in U.S.A., 62, 215, 218, 234, 259, 263, 264, 265, 315, 427, 486; sawflies on, in Yugoslavia, 288; experiments with *Hylotrupes bajulus* and wood of, 118, 251, 252.
Pine, Jack (see *Pinus banksiana*).
Pine, Japanese Red (see *Pinus densiflora*).
Pine, Lodgepole (see *Pinus contorta*).
Pine, Longleaf (see *Pinus palustris*).
Pine, Ponderosa (see *Pinus ponderosa*).
Pine, Red (see *Pinus resinosa*).
Pine, Scots (see *Pinus sylvestris*).
Pine, Slash (see *Pinus elliottii*).
Pine, Sugar (see *Pinus lambertiana*).
Pine, White (see *Pinus strobus*).
Pine Shoot Moth, European (see *Rhyacionia buoliana*).
Pine Tortoise Scale (see *Toumeyella numismatica*).
Pine Web-spinning Sawfly, Red (see *Cephalcia marginata*).
Pine Weevil (see *Hylobius abietis*).
Pineapple, *Dysmicoccus brevipes* on, in South Africa, 298; effect of strains of *D. brevipes* on, in Ceylon, 112; *D. brevipes* on, in Ghana, 210.
α-Pinene, reactions of *Hylastes* spp. to, 207; chlorinated mixture of isomers of (see Strobane).
pinguis, Anomala; *Tylomyza*.
pini, Diprion; *Ips*.
piniarius, Bupalus.
pinifoliae, Phenacaspis.
pinivora, Acantholyda.
Pinus banksiana, pests of, in Canada, 129, 315, 390, 481; pests of, in U.S.A., 265, 315, 486.
Pinus contorta, Dendroctonus on, in U.S.A., 263.
Pinus contorta var. *latifolia*, insects associated with *Ips* spp. in slash of, in Alberta, 269, 333.
Pinus densiflora (and var. *umbraculifera*), *Matsucoccus resinosae* on, in New York, 259.
Pinus echinata, Neodiprion excitans on, in Virginia, 265.
Pinus elliottii, Dendroctonus terebrans on, in Florida, 215.
Pinus insignis (see *P. radiata*).
Pinus lambertiana, Conophthorus lambertianae on, in California, 234.
Pinus palustris, Dendroctonus terebrans on, in Florida, 215.
Pinus pinaster, development of *Hylotrupes bajulus* in wood of, 251.
Pinus ponderosa, pests of, in British Columbia, 10, 191; Scolytids on, in U.S.A., 263, 427.
Pinus radiata, development of *Hylotrupes bajulus* in wood of, 251, 252.
Pinus resinosa, pests of, in Canada, 85, 129, 315, 316, 319, 481, 482, 486; pests of, in U.S.A., 259.
Pinus rigida, Neodiprion pratti paradoxicus on, in U.S.A., 265.
Pinus strobus, pests of, in Ontario, 129, 481; *Pissodes strobi* on, in U.S.A., 62, 218.
Pinus sylvestris, Hylobius abietis on, in Britain, 361.
Pinus tabulaeformis, Matsucoccus resinosae on, in New York, 259.
Pinus taeda, sawflies on, in U.S.A., 264, 265.
Piper nigrum, new Tingid on, in New Britain, 357; arthropods and moulds in dried fruits of, imported into U.S.A. from India, 338, 339.
piperica, Nesocypselas.
Piperonyl Butoxide, tests of toxicity of, to stored-product beetles, 236; as synergist for pyrethrins, 53, 92, 120, 133, 134, 171, 274, 285, 339, 352, 353, 430.
Pirazinon (see O,O-Diethyl O-2-Propyl-4 - methyl - 6 - pyrimidinyl Phosphorothioate).
pisi, Macrosiphum (see *M. pisum*).
Pissodes notatus, parasites of, on pine in Italy, 362.
Pissodes strobi, on *Pinus strobus* in U.S.A., 62, 218; radioactive-tracer study of dispersion of, 218; effect of γ-radiation on, 335; litter treatment with endrin against, 62.
Pistacia vera (Pistachio), pests of, in Syria, 238; *Recurvaria pistaciicola* on, in U.S.S.R. and Persia, 238.
pistaciella, Schneidereria.
pistaciicola, Recurvaria.
pisum, Macrosiphum (*Acyrthosiphon*).
Pitangus sulphuratus, suggested introduction of, into Bermuda against *Anolis* spp., 416.
Pittosporum, Brevipalpus inornatus on, in Japan, 153.
plagiophleps, Pteroma.
plana, Metisa.
Planococcus citri, sprays against, on vines in South Africa, 299; in West Africa, 210, 407; in Bahia, 318; in Ceylon, 113; on cacao, 318, 407; experiments with, in relation to viruses of cacao and associated trees, 113, 210; on *Cola*, 407.
Planococcus lilacinus, not transmitting virus between cacao and *Erythrina lithosperma* in Ceylon, 113.

Plant Quarantine Enforcement, handbook on principles of, **73.**
Plantago major (Plantain), Cicadellids transmitting viruses to other plants from, in California and Britain, **17, 146.**
Plants, review of resistance of, to insects, **255.**
platani, *Willowsia.*
platensis, *Aphidius.*
Platyedra gossypiella (Pink Cotton Bollworm), survey of data on, in tropical Africa, **502;** in India, **13;** in Mexico, **352;** in Texas, **57, 60, 61, 174, 335, 346, 352, 435, 438, 439, 440, 441, 490;** effect of, on yield and quality of cotton, **57, 435;** varieties of cotton in relation to, **61, 490, 491;** on *Hibiscus*, **441;** pairing and oviposition habits of, **174, 346;** analysis and simulation of cotton extrafloral nectar as food for adults of, **61;** factors influencing winter survival of, **440, 441;** technique for stimulating emergence of, from cotton samples, **449;** dietary factors in synthetic media for rearing, **186, 435;** natural enemies and attempted biological control of, **13, 335, 352;** insecticides against, **60, 61, 438, 439;** autumn ploughing against, **441.**
Platygaster, parasite of *Dasyneura affinis* in Germany, **246.**
Platygaster diplosisae, parasite of *Pachydiplosis oryzae* in French Cameroons, **30, 111;** parasite of, **30.**
Platygaster tuberosa, parasite of wheat gall-midges in Germany, **79.**
platygasteri, *Neanastatus tenuis.*
Platynaspis higginsi, predacious on *Pseudococcus njalensis* in Ghana, **164.**
Platynota, natural enemies of, on cotton in Peru, **454.**
Platynota stultana (in California), on cotton, **95, 383;** on lucerne, **383;** bionomics and natural enemies of, **383;** insecticides against, **95.**
platynotae, *Cremastus*; *Goniozus.*
Platyparea poeciloptera (Asparagus Fly), laboratory tests of insecticides against, **7.**
Platypus, infesting timber in West Africa, **408.**
Platypus cylindrus, measures against, in oak logs in Germany, **78.**
Platypus wilsoni, in softwood logs in British Columbia, **265.**
Platyscapulus auricomus, investigations on, in forests in Ivory Coast, **274.**
Platysoma oblongum, predacious on *Hylobius piceus* in Sweden, **142.**
Platytelenomus hylas, parasite of *Sesamia* in French Cameroons, **365.**
plebeja, *Euscelis.*
pleurostigma, *Ceutorhynchus.*
Pleurotropis (see *Pediobius*).
Plistophora melolonthae, infecting *Melolontha* larvae in Germany, **290.**
Plistophora schubergi, infecting Lepidoptera in Czechoslovakia, **290.**
Plodia interpunctella, fumigation of imported groundnuts against, in Canada, **132;** in stored dates in Libya, **297;** in stored cereals in U.S.A., **173, 352;** toxicity of insecticides to, **352.**
plorabunda, *Chrysopa.*
Plum, pests of, in Egypt, **24, 28;** pests of, in France, **139, 318;** pests and predacious mites on, in Germany, **2, 402, 403, 460;** *Hyalopterus pruni* on, in U.S.S.R., **285;** pests of, in U.S.A., **222, 353;** as food-plant for *Lymantria dispar* and *Hyphantria cunea* in Yugoslavia, **3.**
Plum Curculio (see *Conotrachelus nenuphar*).
Plum Nursery Mite (see *Vasates fockeui*).
plurispinosa, *Megaselia* (see *M. halterata*).
Plusia chalcites, treatments favouring, on beans in New South Wales, **322;** insecticides against, on tobacco in Philippines, **107, 154.**
Plusia orichalcea, food-plant affecting development of *Bracon gelechiae* on, in India, **13.**
Plutella maculipennis (on crucifers), in Bulgaria, **328, 329;** in Germany, **401;** in Indonesia, **159;** in New Zealand, **372, 373;** in Ontario, **192;** bionomics of, **328;** parasites of, **329, 373;** tests of *Bacillus thuringiensis* against, **159;** insecticides against, **192, 329, 401.**
pluviale, *Malacosoma.*
Pnigalio spp., parasites of *Gracillaria syringella* in U.S.S.R., **244.**
Poa caespitosa, insects on, in New Zealand, **359.**
Poa colensoi, insects on, in New Zealand, **359.**
Poa pratensis, Cicadellids on, in Rhode Island, **236.**
poecila, *Solubea.*
poecilоptera, *Platyparea.*
Poeciloscytus cognatus, on beet in U.S.S.R., **80.**
poephaga, *Sesamia.*
Poland, *Empoasca pteridis* on beet in, **80;** *Hypera variabilis* in, **458;** *Leptinotarsa decemlineata* in, **326, 327, 328;** occurrence and use of entomogenous fungi in, **328, 458;** Ichneumonid parasite of *H. variabilis* in, **458.**

polita, Tiphia.
politus, Xyloterinus.
Pollination, bees effecting, on lucerne, **190, 348.**
Polychrosis piceana (see *Paralobesia*).
polychrysa, Chilotraea.
Polyconia spinicornis, on rice in French Cameroons, **365.**
Polyethylene Plastic, as bag lining to exclude insects, etc., **339**; bags of, for inactivating sweep samples of insects, **355**; covers of, for fumigation, **89, 342, 355.**
Polyglycerine, mixture of allyl derivatives of, against *Kotochalia junodi*, **71.**
Polyhedral Disease (see Virus Diseases (of insects)).
Polymastix melolonthae, infecting *Melolontha* larvae in Germany, **290.**
polyphaga, Paralitomastix.
Polystyrene Plastic, traps for fruit-flies made from, **350**; insecticides injuring, **350.**
polytoma, Gilpinia.
Pomace Fly (see *Drosophila melanogaster*).
Pomegranate, *Brevipalpus lewisi* on, in U.S.A., **429.**
pometaria, Alsophila.
pomi, Aphis (*Medoralis*); *Eotetranychus.*
pomonella, Cydia (*Carpocapsa*).
ponderosae, Dendroctonus.
popa, Eupelmus.
Popillia japonica, in U.S.A., **191, 230, 231**; mortality of, at low temperatures, **235**; susceptibility of, to species and strains of milky-disease organisms, **191, 230**; chlordane against, in turf, **231.**
Poplar (see *Populus*).
Popular Names, of insects in Britain, **156.**
Population Studies, of insects, **249, 255, 309, 331, 334, 368, 392, 464, 488**; of Tyroglyphid mites, **40.**
populnea, Saperda.
Populus (Poplar), susceptibility of species of, to *Stilpnotia salicis* in Canada, **126**; *Gypsonoma aceriana* on, in Holland, **284**; *Trochilium apiforme* on, in U.S.S.R., **69.**
Populus alba, **126**; *Saperda populnea* on, in Yugoslavia, **329.**
Populus tremula, Phyllocnistis labyrinthella on, in Norway, **243.**
porteri, Aphidius (see *A. platensis*).
Porthetria (see *Lymantria*).
Porto Rico, new species of *Empoasca* in, **310.**
Portulaca oleracea, susceptible to virus disease of *Capsicum* in Florida, **15.**
postica, Hypera (see *H. variabilis*).
Potash Fertilisers, reducing infestation of cereals by *Lema melanopa*, **118.**
Potassium (in plants), effect of soil insecticides on, **432, 433**; effect of, on Tetranychids, **432, 433.**
Potassium Nitrite, use of, in experiments with virus diseases of Lepidoptera, **431.**
Potato, mites on, in Australia, **32, 259**; *Leptinotarsa decemlineata* on, in Austria, **280**; new weevil on, in Bolivia, **357**; Aphids on, in Britain, **147, 148, 307**; *Limonius agonus* on, in Canada, **130**; *Leptinotarsa decemlineata* on, in Czechoslovakia, **320**; *Agriotes* on, in France, **38**; *L. decemlineata* on, in Germany, **280**; *Gnorimoschema operculella* on, in India, **474**; *Tetranychus marianae* on, in Mauritius, **167**; pests of, in Philippines, **354**; *L. decemlineata* on, in Poland, **326, 327**; *Ceresa bubalus* on, in U.S.S.R., **245**; pests of, in U.S.A., **51, 63, 227, 231, 309, 340, 347, 492**; Aphids and virus diseases of, **19, 51, 147, 307, 455, 492, 495**; *Solanum dulcamara* as reservoir of leaf-roll virus of, in Holland, **455**; Cicadellid-borne virus diseases of, in Japan and Oregon, **35, 492**; favouring infestation of wheat by *Hylemyia coarctata*, **169**; (tubers), *Gnorimoschema operculella* infesting, **474**; Coccids reared on, **27, 393**; unfavourable for parasitism of *Aonidiella aurantii*, **393**; residues in, from schradan treatments, **33**; question of tainting of, by other insecticides, **141, 227, 282**; effect of sulphuryl fluoride on, **88.**
Potato Aphis (see *Macrosiphum solanifolii*).
Potato Leafhopper (see *Empoasca fabae*).
Potato Tuber Moth (see *Gnorimoschema operculella*).
Potato Wireworm, Southern (see *Conoderus falli*).
praetiosa, Bryobia.
praeusta, Lema.
Praon aguti, reproductive behaviour of, reared on *Macrosiphum rosae*, **383.**
Praon palitans, parasite of *Myzocallis maculata* in Europe and Asia, **230, 231**; introduced into U.S.A., **231.**
pratensis, Dichroplus; *Oligonychus.*
pratti, Neodiprion.
Prays citri, EPN against, on *Citrus* in Philippines, **354.**
Prays endocarpa, sprays against, on *Citrus* in Philippines, **106, 354.**
Prince Edward Island, *Stilpnotia salicis* in, **126**; *Coenosia tigrina* in, **130.**

Pristiphora abietina, observations on, on spruce in Germany, **398.**
Pristiphora erichsonii (Larch Sawfly), on *Larix* spp. in U.S.A., **183, 391;** parasite of, **183;** tests of insecticides against, **391.**
Pristomerus hawaiiensis, parasite of *Cryptophlebia illepida* in Hawaii, **104.**
Pristomerus laccae (see *P. šulci*).
Pristomerus marginicollis, *P. šulci* recorded as, **324.**
Pristomerus šulci, parasite of *Holcocera pulverea* in India, **324;** misidentification and synonymy of, **324.**
Pristomerus testaceicollis, *P. šulci* recorded as, **324;** a *nomen nudum*, **324.**
Privet (see *Ligustrum*).
procerae, *Apanteles*; *Goniozus*.
Proceras, on sugar-cane in Philippines, **354.**
Proceras africanus (see *Parerupa*).
procerus, *Trox*.
proclia, *Aphytis*.
Prodenia eridania (see *Laphygma*).
Prodenia litura, on cotton, clover and maize in Egypt, **27, 28;** insecticides against, on tobacco in Philippines, **107, 154;** virus disease of, **27;** light-trap collections of, **27.**
Prodenia ornithogalli, insecticides against, on *Agave sisalana* in Mexico, **279.**
profuga, *Schizonycha*.
proletella, *Aleyrodes*.
Pronematus ubiquitus, predacious on *Oligonychus pratensis* in Texas, **311.**
Propylea quatuordecimpunctata (predacious on Aphids), in Austria, **201;** in Britain, **306;** *Lasius niger* protecting *Aphis fabae* from, **306;** feeding on eggs of own species, **306.**
Propylea quindecimguttata, predacious on *Chermes piceae* in Austria, **201.**
Prosopis juliflora, *Schistocerca gregaria* congregating in, in India, **472.**
Protein Hydrolysate, in bait-sprays or baits against fruit-flies, **90, 91, 349.**
Protoparce quinquemaculata, on tobacco and tomato in U.S.A., **217, 227;** tests of *Bacillus thuringiensis* against, **217;** insecticides against, **227.**
Protoparce sexta, on tobacco in North Carolina, **54, 217;** tests of *Bacillus thuringiensis* against, **217;** insecticides against, **54, 217.**
Protozoa, infecting insects, **289, 290, 398, 439, 440.**
pruinina, *Ctenicera*.
pruinosa, *Sericesthis*.
Prune, new mite on, in Egypt, **28;** pests of, in U.S.A., **180, 309.**
Prunes, Dried, *Carpoglyphus lactis* infesting, **287.**
pruni, *Hyalopterus*.
prunicola, *Typhlocyba*.
prunifoliae, *Rhopalosiphum*.
Prunus (see Cherry, Peach, etc.).
Prunus nana, overwintering of *Myzus persicae* on, in Germany, **195.**
Prunus padus, *Myzus padellus* on, in Norway and Britain, **308.**
Prunus pennsylvanica, as phenological indicator in forest-insect studies, **332.**
Prunus serotina, overwintering of *Myzus persicae* on, in Germany, **164, 165.**
Prunus serrulata, overwintering of *Myzus persicae* on, in Germany, **195.**
Psalidium maxillosum, on beet in Bulgaria, **328.**
Psalis pennatula, on rice in French Cameroons, **365.**
Psallus seriatus (on cotton in U.S.A.), influence of irrigation and fertilisers on, **121;** insecticides against, **91, 92, 436, 438, 444, 446.**
Pseudaletia unipuncta, distinctness of diseases of *Spodoptera mauritia* and, in Hawaii, **173;** parasites and factors favouring outbreaks of, in grass and grain fields in Tennessee, **102.**
Pseudarthria, *Lygus vosseleri* on, in Uganda, **43.**
Pseudaspidoproctus hyphaeniacus, on date palm in Libya, **297.**
Pseudaulacaspis pentagona, on oleander in Bermuda, **268, 416;** bionomics of, on papaya in Dutch Guiana, **318;** food-plants of, in Trinidad, **268;** natural enemies and attempted biological control of, **268, 269, 318, 416.**
Pseudeurostus hilleri, study on oviposition of, in Britain, **65.**
pseudobrassicae, *Rhopalosiphum*.
Pseudococcus, soil treatment with insecticides against, on coffee in Venezuela, **499.**
Pseudococcus adonidum, map of distribution of, **509.**
Pseudococcus brevipes (see *Dysmicoccus*).
Pseudococcus citri (see *Planococcus*).
Pseudococcus gahani, species allied to, transmitting strain of cacao swollen-shoot virus in Ghana, **210.**
Pseudococcus lilacinus (see *Planococcus*).
Pseudococcus maritimus, tests of toxicity of phosphorodithioates to, **285, 286.**
Pseudococcus njalensis (in West Africa), on cacao, **164, 210, 211, 407, 417;** relation of, to swollen-shoot viruses, **210, 211, 417;** on *Cola*, **407;** study of movements of, **417;** ants associated with, **211, 417;** insect enemies of,

164, 211; fungus infesting, **211;** measures against, **211, 417.**
pseudoconspersa, Euproctis.
Pseudogonatopoides mauritianus, parasite of Delphacids in Mauritius, **371.**
Pseudohylesinus nebulosus, bionomics of, on conifers in British Columbia, **10.**
Pseudomicromelus deplanatus, parasite of *Tortrix rosana* in Switzerland, **6.**
Pseudomonas, infecting *Choristoneura murinana* in Czechoslovakia, **398.**
Pseudomonas flectens, sp. n., infecting leguminous plants in Queensland, **74, 75;** transmitted by *Taeniothrips nigricornis,* **75.**
Pseudonapomyza atra, on cereals in Egypt, **24.**
Pseudonapomyza dianthicola, finding and parasites of, on carnation in France, **283.**
pseudonectis, Cydia (*Enarmonia*).
Pseudoperichaeta, parasite of *Pelopidas mathias* in French Cameroons, **365.**
pseudospretella, Hofmannophila.
pseudotasmaniae, Aphodius.
Pseudotheraptus wayi (on coconut), in Mafia Island, **415;** in Zanzibar, **413, 414;** method of estimating injury by, **413–415;** estimation of populations of, **415.**
Pseudotsuga menziesii (Douglas Fir), Coleoptera attacking saplings and logs of, in British Columbia, **10, 265;** pests of, in U.S.A., **125, 218, 347, 385, 488, 489.**
pseudotsugae, Dendroctonus.
pseudotsugata, Hemerocampa.
psidii, Pulvinaria.
Psila rosae (on carrot), in Canada, **131, 316, 317;** in Germany, **203;** bionomics of, in Norway, **36;** parasites and biological control of, **36, 131;** flood destroying, **316, 317;** insecticide treatments against, **141, 203.**
Psilus silvestrii, parasite of *Diopsis collaris* in French Cameroons, **30.**
Psychophagus omnivorus, parasite of *Cephalcia marginata* in Quebec, **86.**
Psylla buxi, sprays against, on *Buxus* in Maryland, **96.**
Psyllids, review of parasites of, **491.**
Psylliodes chrysocephala, cage for newly hatched larvae of, **118.**
Psylliodes cupreata, on beet in U.S.S.R., **80.**
psylloides, Gibbium.
pteridis, Empoasca.
Pterocallidium (see *Myzocallis*).
Pterocyclon mali, infesting windthrown trees in New York, **126.**
Pteroma plagiophleps, on tea in India, **114.**
Pteromalus puparum, parasite of *Pieris rapae* in New Zealand, **373.**
Pterostichus, predacious on wireworms in Nova Scotia, **11.**
Ptinus brunneus (see *P. clavipes*).
Ptinus clavipes, synonymy and modes of reproduction of forms of, **357.**
Ptinus clavipes f. *mobilis,* n. (*latro,* auct.), a triploid gynogenetic form of *P. clavipes,* **357.**
Ptinus fur, synonymy of, **357.**
Ptinus hirtellus (see *P. clavipes*).
Ptinus latro F. (see *P. fur*).
Ptinus latro, auct. (see *P. clavipes mobilis*).
Ptinus pusillus, bionomics of, in England, **240.**
Ptinus tectus, rate of increase of, in Britain, **65;** susceptibility of, to pyrethrum and oil, **171, 172.**
Ptinus villiger, in flour and stored grain in Canada, **64, 165, 392;** unlikely to become established in Britain, **64, 65;** bionomics of, **64, 65;** water trap for detecting, **392.**
pudicus, Carpocoris.
pulchella, Utetheisa.
pulchripennis, Rhopalicus.
pulicaris, Deltocephalus.
Pullus (see *Scymnus*).
pullus, Anagyrus.
pulverea, Holcocera.
Pulvinaria mesembryanthemi, bionomics, parasites and control of, on *Mesembryanthemum* spp. in Argentina, **116.**
Pulvinaria psidii, lizards preventing biological control of, on oleander in Bermuda, **416.**
Pumpkin, insects transmitting virus diseases of, in California and India, **17, 275;** preparations of fruit of, for feeding *Drosophila melanogaster,* **93, 352.**
punctata, Orphulella.
punctatum, Anobium.
punctatus, Eurinoscopus.
puncticollis, Epicauta.
punctiferalis, Dichocrocis.
punctiscuta, Pnignalio (*Eulophus*).
punctiventris, Cleonus (*Bothynoderes*).
punctivitta, Creatonotus.
punctulata, Diacrisia.
punctulatus, Dichroplus.
punctum, Stethorus.
punicae, Oligonychus.
punicipes, Pimpla (*Coccygomimus*).
puparum, Pteromalus.
pupivora, Trichospilus.
pura, Xenocrepis.
purchasi, Icerya.

Purshia tridentata, Malacosoma fragile on, in California, **125.**
pusana, Pyrilla.
pusilla, Cicindela; *Liriomyza*; *Oscinella frit.*
pusilloides, Cryptolestes.
pusillus, Ptinus.
pygmaeana, Asthenia.
Pygmephorus (see *Pediculoides*).
Pyrausta nubilalis, light-trap collections of, in Egypt, **29**; on maize in Japan, **159**; on maize in U.S.A., **56, 61, 62, 94, 350, 440**; injuring potato tubers in New York, **231**; effects of temperature and humidity on development of, **159, 160**; time of sowing maize in relation to, **61, 62**; orientation and feeding behaviour of larvae of, on maize plants, **262**; nutritional requirements of, **262**; factors concerned in susceptibility or resistance of varieties of maize to, **311, 382, 458**; effect of *Perezia pyraustae* on, **439, 440**; hatching of ingested eggs of *Zenillia caesar* in, **192**; insecticides against, **56, 61, 62, 94, 350.**
Pyrausta nubilalis var. *salentialis*, on maize in Philippines, **354.**
Pyrazoxon (see Diethyl 3-Methyl-5-pyrazolyl Phosphate).
Pyrenone Wheat Protectant, **53.**
Pyrethrins (see Pyrethrum).
Pyrethrum (including extracts) tests and uses of, against pests of stored products, **38, 53, 133, 134, 171, 236, 274, 285, 339**; **352, 353**; treatments of picked tomatos with, against *Drosophila*, **345**; in dusts or aerosols against pests on growing crops, **14, 92, 120, 227, 430**; in spray against *Stilpnotia salicis* on poplars, **127**; in mixtures with other insecticides, **14, 127, 227, 352**; piperonyl butoxide as synergist with, **53, 92, 120, 133, 134, 171, 274, 285, 339, 352, 353, 430.**
pyri, Anuraphis (*Sappaphis*); *Brevipalpus* (see *B. geisenheyneri*); *Eriophyes.*
Pyrilla aberrans, apparently a form of *P. perpusilla*, **160.**
Pyrilla perpusilla, on sugar-cane in India, **160, 421, 422**; parasites and hyperparasite of, **421, 422**; characters and interbreeding of forms of, **160.**
Pyrilla perpusilla var. *nigriventris*, on sugar-cane in India, **160**; possibly a distinct species, **160.**
Pyrilla pusana, apparently a form of *P. perpusilla*, **160.**
pyrillae, Ageniaspis; *Cheiloneurus*; *Dryinus* (*Lestodryinus*); *Tetrastichus.*
Pyrilloxenos (see *Halictophagus*).
Pyrolan (1-phenyl-3-methyl-5-pyrazolyl dimethylcarbamate), in aerosols and bait-traps against *Dacus dorsalis*, **91.**
Pyrophorus, introduced into Fiji against *Oryctes rhinoceros*, **105.**
Pyrophyllite, study of adsorption of insecticides on, **339.**
Pythium, compatability of insecticides with fungicides used for treating maize seed against, in Wisconsin, **93.**

Q.

Quadraspidiotus mařani (see *Q. schneideri*).
Quadraspidiotus perniciosus (on fruit trees), in France, **394–397**; in Germany, **460**; in Washington, **89, 90**; bionomics of, **394, 395**; natural enemies of, **395**; sprays against, **89, 90, 395–397, 460.**
Quadraspidiotus schneideri, synonomy of, **14** (and note).
quadratinotatus, Bracon.
quadratum, Piesma.
quadratus, Stenocranophilus.
quadricolor, Cristatithorax.
quadridens, Ceutorhynchus.
quadrifasciatus, Wesmaelius (*Boriomyia*).
quadrimaculatum, Bembidion.
quadripustulata, Brochymena.
quadripustulatus, Exochomus.
quatuordecimpunctata, Propylea.
Quebec, forest pests in, **85, 86, 126, 188**; Scolytids and Dutch elm disease in, **387, 483**; pests of leguminous plants in, **313, 484**; orchard pests in, **84, 85, 87, 483**; *Hylemyia antiqua* in, **130**; natural enemies of pests in, **85, 86, 87, 130, 188.**
Queensland, *Amblypelta* spp. in, **412**; host-fruits of Dacinae in, **320**; wood-boring insects in forest trees and timber in, **158, 240**; *Thrips tabaci* on onion in, **478**; mites on solanaceous plants in, **32, 259**; sugar-cane pests in, **375**; insects and diseases of leguminous plants and tomato in, **31, 74, 75, 258**; arsenic residues on apple in, **478**; *Trogoderma granarium* not found in, **239.**
Queensland Fruit-fly (see *Dacus tryoni*).
quercinaria, Ennomos.
Quercus (see Oak).
quercus, Typhlocyba.
Quince, pests of, in Egypt, **24, 28.**
quindecimguttata, Propylea.
quinquemaculata, Protoparce.

R.

rachiphaga, *Dasnyeura*.
Radioactive Isotopes, sterilisation of *Pissodes strobi* by radiation from, **335**; as tracers (see next entry).
Radioactive-tracer Methods, for labelling insects, **168, 218, 417, 485**; in investigations on insecticides, **46, 182, 228, 336, 508.**
raffrayi, *Coptotermes acinaciformis*.
Rainfall, in relation to insects, **40, 193, 239, 322, 353, 377, 378**; reduction of effectiveness of insecticides by, **48, 49.**
Raoiella indica, bionomics of, on palms in Mauritius, **167, 168**; mite predacious on, **168.**
rapae, *Ceutorhynchus*; *Diaeretus*; *Pieris*; *Trybliographa* (*Cothonaspis*).
Rape, *Dasyneura brassicae* on, in France, **456**; pests of, in Germany, **292, 293, 401, 462**; *Ceutorhynchus assimilis* on, in U.S.A., **382.**
rapidus, *Adelphocoris*.
rapo, *Tetrastichus* (*Geniocerus*).
Raspberry, *Tetranychus telarius* on, in U.S.S.R., **70**; malathion residues on fruits of, **232.**
ratzeburgiana, *Enarmonia* (*Eucosma*).
recurvalis, *Hymenia*.
Recurvaria pistaciicola, on pistachio in U.S.S.R. and Persia, **328**; *Schneidereria pistaciella* possibly a synonym of, **238.**
Recurvaria thujaëlla, on *Thuja occidentalis* in New Brunswick, **332, 391**; bionomics, parasites and control of, **391**; characters of, **332.**
Red-legged Earth Mite (see *Halotydeus destructor*).
Redscale (see *Atriplex rosea*).
reducta, *Aeneolamia*.
reidi, *Cathopsyche*.
reniculella, *Dioryctria*.
rennellensis, *Amplypelta costalis*.
repleta, *Drosophila*.
Resin, in DDT spray, **367.**
resinosae, *Conophthorus*; *Matsucoccus*.
reticulana, *Capua* (see *Adoxophyes orana*).
reticulatus, *Typhlodromus*.
Reticulitermes flavipes, tests of soil insecticides against, **225.**
Reticulitermes hesperus, sand, cinders or insecticide-treated asphalt as barriers against, **447**; technique of rearing, **214, 215.**
Reticulitermes lucifugus, influence of humidity on, **459.**
retusus, *Gnathotrichus*.
Reviews:—Alfaro Moreno (A.), Agricultural Pharmacopoeia, **77**; Bollow (H.), What Pest is that? Pests of Stored Products . . ., **329**; Brandt (H.), What Pest is that? Pests and Diseases of agricultural Crops, **2**; Busvine (J. R.), a critical Review of the Techniques for testing Insecticides, **23**; Deputy (O. C.), A Handbook on the Principles of Plant Quarantine Enforcement for Indonesia, **73**; Eastop (V. F.), A Study of the Aphididae (Homoptera) of East Africa, **213**; Essig (E. O.), Insects and Mites of Western North America, (2nd edn.), **406**; Hering (E. M.), Keys to the Leaf Mines of Europe . . . (vols. I-III), **76**; Jahn (E.), Insect Viruses, **498**; Kotte (W.), Diseases and Pests in Fruit Growing . . . (3rd edn.), **116**; Martin (Hubert), Chemical Aspects of Ecology in relation to Agriculture, **199**; Moreton (B. D.), Beneficial Insects (5th edn.), **282**; Oldroyd (H.), Collecting, Preserving and Studying Insects, **138**; Pearson (E. O.), The Insect Pests of Cotton in Tropical Africa, **501**; Shepard (H. H.), Ed. Methods of Testing Chemicals on Insects (vol. I), **508**; Silveira Guida (A.) *et al*, Investigations on Acridids of Uruguay . . ., **406**; Steinhaus (E. A.) and Smith (R. F.), Ed., Annual Review of Entomology (vol. 3), **255**; Zimmermann (E. C.), Insects of Hawaii (vol. 6), **360**; Coloured Picture-books of Crop Pests in Indonesia, **380.**
Rhabditis maupasi, nematode allied to, introduced into Fiji against *Oryctes rhinoceros*, **105.**
Rhagoletis cingulata indifferens, on cherry in Washington, **217, 431, 432**; study of subspecific identity and biology of, **431, 432**; tests of insecticides against, **217.**
Rhagonycha fulva, uptake of dust deposits by, **41.**
rhamni, auct., *Aphis* (see *A. nasturtii*).
Rhaphitelus maculatus, parasite of *Scolytus rugulosus* in Germany, **202.**
rhediella, *Pammene*.
rhinoceros, *Oryctes*.
Rhinotermes intermedius (see *Schedorhinotermes*).
Rhizopertha dominica (in stored grain), in U.S.A., **238**; effects of storage conditions on, **471**; study of movements of, in bagged wheat, **161**; *Trogoderma granarium* not successfully competing with, **238**; experiments with fumigants and, **88, 298.**

Rhizopus nigricans, *Drosophila* disseminating, on peaches in Ontario, **22.**
Rhizotrogus solstitialis (see *Amphimallon*).
Rhode Island, pests of forage crops and lawn grasses in, **220, 236.**
Rhodes Grass (see *Chloris gayana*).
Rhodes Grass Scale (see *Antonina graminis*).
Rhodesia, Northern, *Nomadacris septemfasciata* in, **369.**
Rhodesia, Southern, maize pests in, **166, 364, 368;** new Pyralid on rice in, **172;** pests of tobacco in, **166, 408;** *Nomadacris septemfasciata* in, **369.**
rhodesiaensis, *Bemisia* (see *B. tabaci*).
rhodesianus, *Callosobruchus*.
Rhoecocoris, restricted to *R. australasiae*, **114.**
Rhoecocoris australasiae, **114.**
Rhoecocoris sulciventris (see *Musgraveia*).
Rhopalicus pulchripennis, bionomics of, parasitising *Ips* in Alberta, **269.**
Rhopalosiphoninus staphyleae tulipaellus, virus disease of cabbage transmitted by, in Germany, **400.**
Rhopalosiphum annuae, *R. fitchii* possibly identical with, **178.**
Rhopalosiphum fitchii (Apple-grain Aphis), in U.S.A., **178;** effects of injury by, on cereals, **178;** *R. prunifoliae* misidentified as, **178;** possibly identical with *R. annuae*, **178.**
Rhopalosiphum maidis (see *Aphis*).
Rhopalosiphum prunifoliae, transmitting virus disease of cereals in Illinois, **18, 19;** *R. fitchii* misidentified as, **178.**
Rhopalosiphum pseudobrassicae, Thimet against, on turnip in California, **451.**
Rhopalosiphum rufomaculatum, chrysanthemum virus transmitted by, in Britain, **147.**
Rhopalosiphum tulipaellus (see *Rhopalosiphoninus staphylae tulipaellus*).
Rhopobota naevana, on cranberry in Canada, **194.**
Rhubarb, malathion residues on, **232.**
Rhyacionia buoliana (on pine), in Michigan, **259;** in Ontario, **12, 391, 485, 586;** radioactive-tracer study of dispersal of, **485, 486;** tests of insecticides against, **12, 259.**
rhyacioniae, *Bracon*; *Hyssopus*.
Rhynchites auratus, bionomics and control of, on cherry in Yugoslavia, **4.**
Rhynchites bacchus, *Monilia* spread by, on fruit trees in Yugoslavia, **287.**
Rhynchocoris longirostris, dieldrin against, on *Citrus* in Philippines, **354.**
ribis, *Cecidophyes* (*Eriophyes*).
riccae, *Leucodiaspis* (*Leucaspis*).
Rice, pests of, in French Cameroons, **29, 30, 110, 111, 365;** Lepidopterous stalkborers on, in other African countries, **172, 303;** pests of, in British Guiana, **119, 120;** pests of, in India, **162, 163, 186;** pests of, in Japan, **276, 321, 380, 422, 423, 453, 475;** pests of, in Malaya, **73, 153, 276, 277;** pests of, in Philippines, **34, 35, 354;** *Lissorhoptrus oryzophilus* on, in U.S.A., **341;** pests of, in Venezuela, **453;** insects transmitting virus diseases of, **35, 453;** method for measuring resistance to *Chlorops oryzae* in, **475.**
Rice (Stored), Coleoptera in, **208, 312;** seed treatment protecting, from insects, **342.**
Rice, Wild (see *Oryza barthi*).
Rice Green Caterpillar (see *Naranga aenescens*).
Rice Stem Maggot (see *Chlorops oryzae*).
Rice Water Weevil (see *Lissorhoptrus oryzophilus*).
Rice Weevil (see *Calandra oryzae*).
Ricinus communis (see Castor).
Rickettsiella (*Rickettsia*) *melolonthae*, investigations on, in larvae of *Melolontha* in Germany, **290, 291.**
riehmi, *Myzocallis* (*Myzocallidium*).
Rileymyia (see *Leschenaultia*).
Robinia pseudacacia, *Tetranychus kanzawai* on, in Japan, **153;** not attacked by *Apion ulicis*, **347.**
Rogas, parasite of *Malacosoma* in U.S.A., **384.**
rosa, *Diatraea*.
rosae, *Macrosiphum*; *Psila*; *Typhlocyba*.
rosana, *Tortrix* (*Cacoecia*).
Rose, *Lyonetia clerkella* on, in Egypt, **24;** *Tetranychus* on, in U.S.S.R., **285, 286;** pests of, in U.S.A., **94, 490.**
roseus, *Anuraphis*.
rostrata, *Aelia*.
rostratus, *Perilampus*.
Rotenone, unsatisfactory in granules against *Pyrausta nubilalis*, **56;** in dusts against other Lepidoptera, **14, 23, 93, 295;** in liquefied-gas aerosols, **227;** mixtures of other insecticides with, **14, 93, 227.** (See Derris.)
rouxi, *Habrolepis*.
Rubbers, Synthetic, low permeability by methyl bromide of materials coated with, **342.**
rubidus, *Spathius*.
rubrioculus, *Bryobia*.
rubrocinctus, *Selenothrips*.
Rübsaamenia, reducing seed production of *Pinus resinosa* in Ontario, **390, 391, 482;** bionomics of, **390;** parasite of, **391.**

rufa, Barylypa.
rufata, Apechthis (*Pimpla*).
ruficornis, Scolia; *Tiphia* (see *T. polita*).
ruficrus, Apanteles.
rufilabris, Chrysopa.
rufimanus, Bruchus.
rufipes, Hylastes (*Hylurgopinus*); *Necrobia*; *Pentatoma*; *Phytomyza.*
rufiventris, Oxycarenus.
rufomaculatum, Rhopalosiphum (*Coloradoa*).
ruforum, Achrysocharella.
rufus, Aptinothrips.
rugulosus, Scolytus.
Rumania, pests of beet in, **80.**
Rumex crispus, as food-plant of *Circulifer tenellus* in Idaho, **122.**
rumicis, auct., *Aphis* (see *A. fabae*).
rusci, Ceroplastes.
Russian Thistle (see *Salsola kali* var. *tenuifolia*).
RX2, in sprays against *Kotochalia junodi*, **71.**
Ryania, against Aphids, **336, 480**; against Lepidoptera, **14, 56, 131, 480**; effect of, on natural enemies of orchard pests, **190, 481**; experiment with *Tyroglyphus farinae* and, **53**; in dust, **14**; in granules, **56**; in sprays, **131, 190, 336, 480, 481**; and glyodin, **480**; effect on apples of mixture of glyodin and, **481.**
Rye, *Agriotes obscurus* injuring, in Canada, **480**; pests of, in U.S.S.R., **80, 244**; Aphids transmitting virus disease of, in U.S.A., **19**; effect of methyl bromide on seed of, **324.**
Ryegrass (see *Lolium perenne*).

S.

Sabulodes caberata, virus diseases of, in U.S.A., **386.**
saccharalis, Diatraea.
saccharella, Dicranoctetes (*Donacivola*).
sacchari, Saccharicoccus.
saccharicida, Perkinsiella.
Saccharicoccus sacchari, on sugar-cane in Guadeloupe, **135.**
saccharina, Eldana.
Saccharosydne saccharivora, natural enemies of, on sugar-cane in Guadeloupe, **135.**
saevissima, Solenopsis.
Sagebrush (see *Artemisia tridentata*).
Sago Palm (see *Cycas revoluta*).
Sahlbergella singularis, on cacao in West Africa, **209, 211, 212, 254, 407**; on *Cola*, **407**; population studies of, **211, 212**; insecticides against, **209, 210, 211, 212, 254.**
saint-cyri, Clastoptera.
Saissetia nigra, synonymy and African forms of, **299.**
Saissetia nigra var. *nitida* (see *S. nigra*).
Saissetia oleae (on *Citrus*), in California, **433**; mite associated with, in Morocco, **232**; parasite of, **433**; sprays against, **232, 433.**
Saissetia perseae (see *S. nigra*).
Saissetia setigera, on guava in Uganda, **299.**
salentialis, Pyrausta nubilalis.
salicis, Stilpnotia.
Salsola kali var. *tenuifolia, Circulifer tenellus* on, in Idaho, **122.**
Salt-marsh Caterpillar (*see Estigmene acraea*).
Saluria, parasites of, on rice in French Cameroons, **30, 365**; bionomics of, **365.**
Samoa, *Oryctes rhinoceros* on coconut in, **157**; introductions of insects and bacilli against *O. rhinoceros* in, **106, 158, 191.**
San José Scale (see *Quadraspidiotus perniciosus*).
sanborni, Macrosiphum (*Macrosiphoniella*).
sanctae-helenae, Heteronychus.
Sand, particle size affecting penetration of, by *Reticulitermes hesperus*, **447.**
sanguinea, Cycloneda.
sanguinolenta, Aceratagallia.
sanguinolentus, Glischrochilus.
Sann-hemp (see *Crotalaria juncea*).
Sann-hemp Shoot Borer (see *Cydia pseudonectis*).
Sanninoidea (see *Aegeria*).
Saperda populnea, bionomics and control of, on *Populus alba* in Yugoslavia, **329.**
Sappaphis mali (see *Anuraphis roseus*).
Sappaphis pyri (see *Anuraphis*).
sara, Amsacta moorei.
Sarcophaga calcifera, parasite of *Chilotraea polychrysa* in Malaya, **74.**
Sarcophaga dux scopariiformis, in Malaya, **74.**
sasakii, Calandra.
Saskatchewan, *Cephus cinctus* on wheat in, **21, 482**; *Melanoplus mexicanus* in, **193**; insects reducing seed production of trees in, **188, 189, 267.**
Satin Moth (see *Stilpnotia salicis*).
saucia, Peridroma.
Sawdust, insecticide treatments of, against *Oryctes rhinoceros*, **105**; uses of, as carrier for BHC, **47, 105**; tomato seed beds mulched with, against *Bemisia tabaci*, **419.**
Sawfly, European Spruce (see *Gilpinia hercyniae*).

Sawfly, Larch (see *Pristiphora erichsonii*).
Sawfly, Red Pine Web-spinning (see *Cephalcia marginata*).
Sawfly, Wheat Stem (see *Cephus cinctus*).
Sawtoothed Grain Beetle (see *Oryzaephilus surinamensis*).
Scale, California Red (see *Aonidiella aurantii*).
Scale, Fig (see *Lepidosaphes ficus*).
Scale, Olive-tree (see *Leucodiaspis riccae*).
Scale, Pine Tortoise (see *Toumeyella numismatica*).
Scale, Rhodes Grass (see *Antonina graminis*).
Scale, San José (see *Quadraspidiotus perniciosus*).
Scale Insects, ants associated with, **112, 163, 211, 254, 417, 498, 499**; mite associated with, **232**; natural enemies of, **112, 116, 135, 164, 196, 259, 263, 268, 269, 275, 284, 296, 297, 298, 318, 393, 394, 416**; relation of, to swollen-shoot of cacao, **112, 113, 163, 210, 211, 254, 417**; of New Caledonia, **278**; new species of, **25**; bibliography of, **77**.
Scandium, Radioactive, used for labelling *Pissodes strobi*, **218**.
Scaphytopius acutus, seasonal occurrence of, transmitting X-disease of peach in U.S.A., **494**; sprays against, **494**.
Scaptocoris castaneus, soil insecticides against, on sugar-cane in Brazil, **500**.
Scaptomyza graminum, insecticides against, on spinach in Michigan, **434**.
Scatopse nigra, bionomics of, on barley in Turkey, **152**.
Schedorhinotermes intermedius actuosus, distribution of, in Western Australia, **358**.
schistaceana, Argyroploce.
Schistocerca gregaria, in East Africa, **410, 504, 505, 506**; in Arabia, **160, 410, 504, 505**; in India, **160, 162, 363, 471**; in Pakistan, **160**; in Socotra, **504**; report on breeding, migration and control of, in 1953–55, **504–506**; Kuwait as breeding area of, **160, 505**; effects of temperature and light on feeding activity of, **363**; insects destroying eggs of, **410**; uses and tests of insecticides against, **160, 162, 472, 504, 505, 506**; birds facilitating insecticidal control of, **471, 472**.
Schizaphis graminum (see *Toxoptera*).
Schizobremia coffeae, predacious on *Pseudococcus njalensis* in Ghana, **164**.
Schizonycha citima, on tobacco in S. Rhodesia, **408**; adult habits of, **408**.
Schizonycha profuga, on tobacco in S. Rhodesia, **408**; adult habits of, **408**.
Schizotetranychus, Bdella depressa predacious on, in Illinois, **47**.
Schizura ipomaeae, bionomics and control of, on plum in California, **222**.
schlechtendali, Vasates.
Schneidereria pistaciella, gen. et sp. n., bionomics and control of, on pistachio in Syria, **238**; possibly synonym of *Recurvaria pistaciicola*, **238**.
schneideri, Chermes nordmannianae; *Quadraspidiotus*.
Schoenobius incertulas (on rice), in India, **186**; in Malaya, **74, 153, 276**; in Philippines, **34, 354**; light-trap collections of, **276**; sprays against, **34, 35, 153, 186, 356**; *Scirpophaga chrysorrhoea* possibly confused with, **172**.
Schradan, against Aphids, **115, 116, 139, 256, 341, 348, 354, 499, 500**; against *Leucodiaspis riccae*, **26**; against Diptera, **97, 98, 373**; against mites, **34, 50, 140, 214, 282**; laboratory tests of toxicity of, to insects, **174, 486**; in sprays, **26, 33, 34, 50, 97, 108, 115, 116, 139, 140, 214, 256, 281, 282, 341, 348, 373, 499, 500**; tests of systemic action and other methods of application of, **33, 97, 108, 115, 174, 256, 424, 499, 500**; responses of cotton to, **108**; investigations on residues of, in plants, **33, 282, 348**; and tetraethyl pyrophosphate, **256**; proprietary preparation of, **26, 34**.
schubergi, Plistophora.
Scirpophaga, parasites of, on rice in French Cameroons, **365**.
Scirpophaga chrysorrhoa, possibly confused with *Schoenobius incertulas*, **172**.
Scirpophaga nivella (on sugar-cane), seasonal history of, in Bombay, **472**; in Philippines, **354**; as host for *Bracon gelechiae*, **13**.
Scirpophaga nivella intacta, on sugar-cane in Philippines, **354**.
Scirpus grossus, rice borers on, in Malaya, **74**.
Scleroracus vaccinii, on cranberry in Canada, **194**.
Sclerotinia fructicola (infesting peaches), insects disseminating, in Ontario and California, **22, 494**.
Sclerotinia trifolium, Hylastes obscurus disseminating, on clover in Quebec, **313**.
Scolia, parasite of Lamellicorn larvae in Hungary, **68**.
Scolia oryctophaga, introduced into Fiji against *Oryctes rhinoceros*, **105**.
Scolia ruficornis, establishment of, against *Oryctes rhinoceros* in Samoa, **106**.

Scolothrips longicornis, predacious on Tetranychid in Egypt, **27.**
Scolothrips sexmaculatus, predacious on Tetranychids in U.S.A., **58, 311.**
Scolytus multistriatus (vector of Dutch elm disease), in Ontario and U.S.A., **387, 483;** bionomics of, **483;** measures against, **387.**
Scolytus rugulosus, parasites of, on pear in Germany, **202.**
scopariiformis, Sarcophaga dux.
scortilla, Diacrisia.
Scots Pine (see *Pinus sylvestris*).
Screwpine (see *Pandanus*).
scrupulosa, Teleonemia.
scutellaris, Coccophagus.
scutellatus, Monochamus.
Scyllinops bruneri, denuding grazing lands in Uruguay, **406;** dusts against, **406.**
Scyllinops pallida, denuding grazing lands in Uruguay, **406.**
Scymnus, predacious on *Pseudococcus njalensis* in Ghana, **164;** predacious on *Parlatoria blanchardii* in Morocco, **296;** predacious on *Aleurocanthus woglumi* in Pakistan, **73.**
Scymnus impexus (predacious on *Chermes* spp.), in Europe, **201, 246;** establishment of, in Canada, **266;** bionomics of, **201.**
Scyphophorus interstitialis (*acupunctatus*), sprays against, on *Agave fourcroides* in Mexico, **279.**
segeta, Busseola.
segetum, Agrotis.
sekiyai, Notiphila.
Selenothrips rubrocinctus, on cacao in Bahia, **318.**
semblidis, Trichogramma.
semiberbis, Sturmiopsis (see *S. inferens*).
semibrunnea, Odites.
Semidalis, predacious on *Aleurocanthus woglumi* in Pakistan, **73.**
semiflavus, Aphelinus.
semiregularis, Lema.
semitectus, Colopterus.
seniculum, Apion.
separatella, Maliarpha.
septemfasciata, Nomadacris.
septempunctata, Coccinella.
septendecim, Magicicada.
seriatus, Psallus.
sericata, Charitopimpla.
sericea, Trichispa.
sericeicornis, Sympiesis.
Sericesthis pruinosa, new bacteria infecting, in Australia, **158, 191.**
serius, Eretmocerus.
serrans, Compsus.
serricorne, Lasioderma.
sertifer, Neodiprion (*Diprion*).
servillei, Diopsis.
servus, Euschistus.
Sesamia, parasites of, on rice in French Cameroons, **30, 365.**
Sesamia botanephaga, distribution of, on maize in Ghana, **152;** food-plants of, in Uganda, **303.**
Sesamia calamistis (on cereals), distribution of, in Ghana, **152;** in S. Rhodesia, **364;** in Uganda, **303, 304;** on sugar-cane and grasses, **303;** life-cycle and parasites of, **304.**
Sesamia inferens, on rice in Malaya, **73, 153, 276;** on rice and sugar-cane in Philippines, **354;** failure to rear *Paratheresia claripalpis* on, **73;** doubtful value of insecticides against, **153, 354.**
Sesamia nonagrioides, insecticides against, on maize in Morocco, **295, 296.**
Sesamia poephaga, distribution of, on maize in Ghana, **152;** food-plants of, in Uganda, **303.**
sesamiae, Apanteles; *Bracon quadratinotatus*; *Tetrastichus.*
Sesbania bispinosa (*aculeata*), *Cydia pseudonectis* on, in India, **161.**
setigera, Saissetia.
Sevin (1-naphthyl N-methylcarbamate), in sprays: against *Brevicoryne brassicae*, **430**; against *Magicicada septendecim*, **448, 449;** against *Panonychus ulmi*, **261;** against *Thrips tabaci*, **349;** against *Zeadiatraea grandiosella*, **220.**
sexmaculatus, Eotetranychus; *Menochilus* (*Cheilomenes*); *Scolothrips.*
sexta, Protoparce.
Shallots, stage of development of, in relation to *Hylemyia antiqua* in France, **283;** *Myzus ascalonicus* on stored, in Denmark, **405.**
Sheep, conversion of aldrin to dieldrin in, **99.**
sheldoni, Aceria.
Shell OS-2046 (see Dimethyl 2-Methoxycarbonyl-1-methylvinyl Phosphate).
Shell Risella 17, **171.**
Shell Supona DPS, **34.**
Sialis lutaria (*flavilatera*), *Trichogramma semblidis* parasitising, in central Europe, **399.**
Sida, Oxycarenus spp. on, in Uganda, **502.**
Sigalphus, auct. (see *Triaspis*).
signatipennis, Lema.
sikkima, Clania.
Silica, experiments with colloidal, against stored-product insects, **150.**
Silk, new *Trogoderma* in, in Minnesota, **262.**
Silkworm (see *Bombyx mori*).

Silver-fir Shoot Tortricid (see *Choristoneura murinana*).
silvestrii, Psilus (*Galesus*).
similis, Epilachna; *Hortensia*.
simillima, Cryptognatha.
simmondsi, Melaleucopis.
simplex, Chilo (see *C. suppressalis*); *Taeniothrips*.
Sinapis arvensis, Ceutorhynchus pleurostigma on, in Germany, **292.**
singula, Tömösváryella.
singularis, Sahlbergella.
Sipha flava, on sugar-cane in Guadeloupe, **135;** Coccinellid predacious on, **135.**
siro, auct., *Acarus* (see *Tyroglyphus farinae*).
Sisymbrium altissimum (see *Norta*).
Sitodiplosis mosellana, on wheat in Germany, **78, 79;** natural enemies and disease of, **79.**
Sitona cylindricollis, fungus infesting, on *Melilotus* in Minnesota, **180.**
Sitona hispidulus (in U.S.A.), on clover, **187;** on lucerne, **441;** fungus infesting, **441;** insecticides against, **180, 441.**
Sitophilus (see *Calandra*).
Sitotroga cerealella, in Louisiana, **47;** in Yugoslavia, **5;** in stored grain, **5, 47, 334, 471;** loss of weight caused by, in maize, **334;** effect of storage conditions on, **471;** experiments with *Trichogramma* spp. and, **399;** fumigants against, **5, 88;** tests and uses of other insecticides against, **47, 171, 172.**
Six-spotted Leafhopper (see *Macrosteles fascifrons*).
Slash Pine (see *Pinus elliottii*).
Sminthurus viridis (in pastures in Australia), apparatus for sampling of, **75;** insecticides against, **31, 32, 278;** DDT favouring, **278.**
Smotherweed (see *Bassia hyssopifolia*).
Smynthurodes betae, on beans in India, **297.**
Snail, Giant African (see *Achatina fulica*).
Soap, Fish-oil Resin, ineffective in dip for sorghum seedlings against *Atherigona indica*, **72.**
Socotra, *Schistocerca gregaria* in, **504.**
Sodium Cyanide, for generating hydrogen cyanide (*q.v.*), **28.**
Sodium Fluoride, aircraft dusting with, against *Laphygma exigua*, **244;** reduced effectiveness of, in flour conditioned by *Tribolium confusum*, **442.**
Sodium Fluosilicate, as dust against *Laphygma exigua*, **244;** applied from aircraft, **244.**
Sodium Pentachlorophenate, soil treatment with, against *Reticulitermes flavipes*, **226.**
Soil, methods and apparatus for removing arthropods from samples of, **22, 75, 397;** types of, in relation to insecticide treatments, **88, 98;** effects of insecticides on micro-organisms in, **156.**
solana, Empoasca.
solani, Macrosiphum (*Aulacorthum*).
solanifolii, Macrosiphum.
Solanum dulcamara, Myzus persicae transmitting potato leaf-roll from, in Holland, **454, 455.**
Solanum gracile, as reservoir of Aphid-borne virus of *Capsicum* in Florida, **15, 493, 494.**
Solanum melongena (see Egg-plant).
Solanum nigrum, Vasates lycopersici on, in Queensland, **32.**
Solanum rostratum, Epitrix tuberis on, in U.S.A., **340.**
Solanum triflorum, Circulifer tenellus on, in Idaho, **122.**
Solanum tuberosum (see Potato).
soleiger, Typhlodromus.
Solenopsis, maps of distribution of species of, **509.**
Solenopsis geminata, **509.**
Solenopsis saevissima, **509.**
Solenopsis saevissima richteri, **509.**
Solenotus begini (parasite of Agromyzids), bionomics of, in California, **237.**
Solenotus isaea, parasite of *Pseudonapomyza dianthicola* in France, **283.**
solitarius, Apanteles.
Solomon Islands, *Amblypelta* spp. in, **412, 413;** *Brontispa longissima* on coconut in, **300.**
solstitiale, Amphimallon (*Rhizotrogus*).
Solubea poecila (Paddy Bug), bionomics of, in British Guiana, **119–120;** parasites of, **120;** insecticides against, **120.**
Solubea ypsilon-griseus, on rice in British Guiana, **120.**
Somalia, *Schistocerca gregaria* in, **410, 504, 505;** *Trox procerus* in, **410.**
Somaliland, British, *Schistocerca gregaria* in, **504, 505.**
Sonchus oleraceus, Phytomyza atricornis on, in California, **237.**
Sooty Mould, associated with *Aleurocanthus woglumi*, **72.**
sophorae, Brassolis.
Sorbic Acid, moulds on stored pepper not inhibited by, **339.**
sordidus, Cosmopolites.
sorghicola, Contarinia.
Sorghum, Cecidomyiid on, in Ghana, **413;** pests of, in India, **72, 101, 345, 413;** pests of, in Tanganyika, **39, 40, 164;** pests of, in Uganda, **43, 303, 304;** pests of, in

U.S.A., **123, 187, 310, 311, 425**; infestation of, by *Aceria tulipae* in Kansas, **312**; investigations on resistance of varieties of, to *Aphis maidis*, **123**; as trap crop for *Calidea dregii*, **164**; translocation of BHC in, **54**; systemic insecticides impairing germination of seed of, **425**; (stored), effects of moisture content and ventilation on insect infestation of, **471**.

Sorghum, Lepidoptera infesting wild species of, in Uganda, **303, 304**.

soudanensis, *Hyperchalcidia*.

Southern Potato Wireworm (see *Conoderus falli*).

Southwestern Corn Borer (see *Zeadiatraea grandiosella*).

Soy Bean, *Elasmopalpus lignosellus* on, in California, **425**; effect of rearing *Callosobruchus maculatus* on seeds of, **25**; effects of soil insecticides on composition, growth and nutritive value to *Tetranychus telarius* of, **432**; translocation of BHC in, **54**; systemic insecticides impairing germination of seed of, **425**.

Soy-bean Flour, not affecting injury to cucurbits by DDT, **20**.

Spain, parasites and biological control of *Lymantria dispar* in, **294, 295**; parasite of *Malacosoma neustria* in, **294**; handbook on pest control in, **77**.

Spalgis epius, predacious on cacao mealybugs in Ceylon, **112**.

Sparganothis pilleriana, bionomics and attempted control of, on strawberry in Switzerland, **77, 78**.

spartifoliella, *Leucoptera*.

spartii, *Cryptolestes*.

Spathius exarator, parasite of *Anobium punctatum* in Norway, **463**.

Spathius rubidus, parasite of *Pissodes notatus* in Italy, **362**.

speciosa, *Bryobia*.

speciosus, *Alaus*.

spectra, *Tettigella*.

specularis, *Megastigmus*.

sphaleropa, *Eulia* (*Argyrotaenia*).

sphegeus, *Enoclerus*.

Spiders, destroying noxious insects, **259, 371**.

Spilonota ocellana, Mirid possibly predacious on, on apple in Nova Scotia, **190**.

Spinach, Diptera infesting, in U.S.A., **434**; used in experiments on virus transmission by *Liriomyza langei*, **498**.

spinicornis, *Polyconia*.

spinifera, *Agrotis*.

spiraecola, *Aphis*.

Spodoptera mauritia, in Hawaii, **173, 174**; damaging lawns, **173**; virus disease of, **173, 174**; not infected with virus of *Pseudaletia unipuncta*, **173**; accidental transport of, in aircraft, **158, 174**.

Spodoptera triturata, on rice in French Cameroons, **365**.

Spondias, *Ceratitis capitata* on, in Costa Rica, **121**.

spoofi, *Phytoseius* (see *P. macropilis*).

Sprays, applied from aircraft, **71, 95, 187, 277, 299, 300, 374, 412, 418, 425, 426, 505, 506**; ground equipment for applying, **38, 192, 301**; effect of drift on results from, **368**; bulletin on application of, in orchards in England, **37**; apparatus for laboratory tests of, **508**.

Spruce, pests of, in Canada, **86, 188, 191, 466, 485**; pests of, in Germany, **66, 195, 302, 398, 460, 461**; *Asthenia pygmaeana* on, in Italy, **457**; *Enarmonia ratzeburgiana* on, in Norway, **320**; *Hylobius* spp. on, in Sweden, **142**; pests of, in U.S.A., **126, 347, 488**; experiments with *Lambdina fiscellaria* and, **128**.

Spruce, Engelmann (see *Picea engelmanni*).

Spruce, Red (see *Picea rubens*).

Spruce, White (see *Picea glauca*).

Spruce Budworm (see *Choristoneura fumiferana*).

Spruce Sawfly, European (see *Gilpinia hercyniae*).

sputator, *Agriotes*.

Squash, new *Empoasca* on, in Nicaragua, **310**; pests of, in Ontario, **23**; pests of, in U.S.A., **14, 15, 16, 17, 18, 60, 437**; insects and virus diseases of, **15, 16, 17, 18**; effect of methyl-parathion on, **15**.

Squash Bug (see *Anasa tristis*).

Squash Vine Borer (see *Melittia cucurbitae*).

stabulans, *Muscina*.

Stachytarpheta cayennensis, *Pseudaulacaspis pentagona* on, in Trinidad, **268**.

stagnalis, *Nymphula* (see *N. depunctalis*).

staphyleae, *Rhopalosiphoninus*.

Staphylinus, feeding on wireworms in Nova Scotia, **11**.

Star-apple (see *Chrysophyllum cainito*).

Stauffer R-1303 (see Trithion).

stebbingi, *Drosicha*.

Stegobium paniceum, test of oil sprays and deposits against, **172**.

Steleocerus (see *Mepachymerus*).

Stellaria media, *Myzus ascalonicus* on, in glasshouse in Denmark, **79**.

stemmator, *Xanthopimpla*.

Steneotarsonemus pallidus, on strawberry in California, **311, 355, 441;** on *Jasminum sambac* in Hawaii, **74;** bionomics of, on strawberry in U.S.S.R., **69, 70;** importance and use of mites predacious on, **311;** other measures and experiments against, **70, 74, 355, 441;** characters of, **74.**
Stenocranophilus quadratus, probably parasitising *Saccharosydne saccharivora* in Guadeloupe, **135.**
stercorea, *Typhaea.*
Stethorus punctum, predacious on *Oligonychus pratensis* in Texas, **310, 311.**
Stethorus vinsoni, predacious on Tetranychids in Mauritius, **167, 168.**
stigmatera, *Agathis.*
Stilpnotia salicis, bionomics, introduced parasites and control of, on poplars and willow in Canada, **125, 126;** in Czechoslovakia, **289;** not infected by *Thelohania hyphantriae*, **289.**
Stirobracon, parasite of *Oncocephala tuberculata* in Java, **478.**
Stomorhina lunata, Trogid destroying, in egg pods of *Schistocerca gregaria* in Arabia, **410.**
stramineipes, *Pnigalio* (*Eulophus*).
Strategus aloeus, on coconut in Dutch Guiana, **406.**
Strategus julianus, sprays against, on *Agave fourcroides* in Mexico, **279.**
Strawberry, *Ancylis comptana* on, in Canada, **131;** pests of, in France, **7, 202;** pests of, in Germany, **195, 202;** *Capitophorus fragaefolii* on, in Holland, **202;** *Sparganothis pilleriana* on, in Switzerland, **77;** mites on, in U.S.S.R., **69, 70;** pests of, in U.S.A., **202, 260, 311, 355, 441, 451;** insects and virus diseases of, in U.S.A. and Britain, **145, 146, 202;** hot-water treatment of runners of, against mites, **70;** schradan residues in fruits of, **33.**
Strawberry Aphis (see *Capitophorus fragaefolii*).
Strawberry Leaf-roller (see *Ancylis comptana*).
striatella, *Delphacodes.*
striatula, *Crematogaster.*
striatus, *Tabanus.*
Striga spp., *Lasioderma serricorne* in stored seed of, in India, **473;** proposed use of *L. serricorne* against, **473.**
strigata, *Allotruxalis.*
Striped Cucumber Beetle (see *Acalymma vittata*).
Strobane (chlorinated mixture of α-pinene isomers), against *Anthonomus grandis*, **48, 52;** against Cicadellids, **214, 337;** against Lepidoptera, **52, 54, 55, 56, 227;** against Tetranychids, **227, 261;** against Thysanoptera, **214, 445, 446;** against *Trialeurodes vaporariorum*, **214;** laboratory tests of toxicity of, to insects, **174, 217, 237;** causing injury to cucurbits, **227;** in liquefied-gas aerosols, **227;** in dust, **174;** in granules, **56;** in sprays, **48, 52, 54, 55, 214, 217, 261, 337, 445, 446;** mixed with other insecticides, **52, 227;** other agents in sprays containing, **337.**
strobi, *Pissodes.*
Strumeta (see *Dacus*).
stultana, *Platynota.*
Sturmia bohemica, parasitising *Gilpinia hercyniae* in New Brunswick, **485;** effect of host movement on selection of hosts by, **127.**
Sturmia harrisinae, parasite of *Harrisina brillians* in California, **86;** possibly disseminating virus disease of *H. brillians*, **87.**
Sturmia inconspicua, parasite of *Diprion pini* in Czechoslovakia, **325.**
Sturmiopsis inferens (*semiberbis*), parasite of *Chilotraea polychrysa* in Malaya, **74.**
Stylosanthes, virus disease infecting, in Queensland, **31.**
styx, *Pachynematus.*
subinnotatus, *Callosobruchus* (*Bruchus*).
subtalbatus, *Brachycyttarus.*
Subterranean Clover (see *Trifolium subterraneum*).
Sucrose (see Sugar).
Sudan, cotton pests in, **108, 109, 165, 166, 368;** natural enemies of *Diparopsis watersi* in, **165;** virus infecting *Heliothis armigera* in, **455.**
Sudan Bollworm (see *Diparopsis watersi*).
Sugar, in bait-spray for *Ceratitis capitata*, **24;** used alone or in mixtures for feeding adult insects, **13, 26, 61, 184, 267, 358, 422;** effect on *Macrosiphum pisum* of content of, in pea plants, **484;** effect of *Bemisia* and parathion on content of, in cotton plants, **109.**
Sugar Pine (see *Pinus lambertiana*).
Sugar-cane, *Scaptocoris castaneus* on, in Brazil, **500;** pests of, in British Guiana, **119, 356;** pests of, in India, **160, 421, 472;** key to larvae of moth-borers of, in India, **163;** Delphacids and diseases of, in Mauritius and Madagascar, **371;** pests of, in Peru, **500, 501;** pests of, in Philippines, **354;** pests of, in Queensland, **375;** Lepidoptera on, in Uganda, **303;** pests of, in Venezuela, **355, 356, 452, 453;** pests of, in West Indies, **134, 135.**

Sugar-cane Top-borer (see *Scirpophaga nivella*).
Sugar-pine Cone Beetle (see *Conophthorus lambertianae*).
suginamensis, Eotetranychus.
sulcata, Phasgonophora.
sulcatus, Gnathotrichus.
šulci, Pristomerus.
sulciventris, Musgraveia (*Rhoecocoris*).
Sulphenone (see p-Chlorophenyl Phenyl Sulphone).
Sulphur, against mites, **32, 45, 50, 58, 85, 176, 177, 214, 232, 259, 274, 429**; *Drosophila* possibly repelled from peaches by, **22**; dusting with, **32, 50, 58, 176, 177, 232, 274, 439**; in mixed dusts, **52, 221, 274, 322, 438, 439**; spraying with, **22, 32, 45, 85, 180, 214, 259, 274, 429**; in mixed sprays, **180, 234, 274, 429, 480.**
Sulphur Dioxide, tests of, as a fumigant against pests of stored products, **45, 46, 287**; effect of mixing, with inflammable fumigants, **46.**
Sulphuric Acid, and sodium cyanide, for generating hydrogen cyanide, **28.**
Sulphuryl Fluoride, experiments with, as a fumigant against insects, **88, 89**; method of fumigating buildings with, against termites, **89**; physical properties of, **88**; effects of, on plants and plant products, **88, 89.**
sundaica, Empoasca.
Sunflower, *Ligyrus gibbosus* on, in Kansas, **235**; translocation of BHC in, **54.**
Superphosphate, insecticides applied in, **277.**
suppressalis, Chilo.
surinamensis, Oryzaephilus.
suturalis, Microweisea.
Swaziland, cotton pests in, **407**; *Maliarpha separatella* on rice in, **172.**
Swede, *Hylemyia* on, in British Columbia, **98**; *Myzus ascalonicus* on, in clamps in Denmark, **405**; Aphids in relation to varieties and virus disease of, in New Zealand, **255–257**; schradan residues in, **33.**
Sweden, *Torymus varians* on apple in, **117**; *Empoasca pteridis* transmitting beet mosaic in, **80**; *Hylobius* spp. on conifers in, **141, 142**; *Oscinella frit* on oats in, **243**; *Platysoma oblongum* predacious on *H. piceus* in, **142.**
Sweet Clover (see *Melilotus*).
Sweet Clover Weevil (see *Sitona cylindricollis*).
Sweet Potato, insects and virus diseases of, in East Africa, **497**; new Coreid on, in Bougainville, **413**; *Oncocephala tuberculata* on, in Java, **477**; contamination of tubers of, by soil insecticides, **282.**
Swietenia mahagoni, Macalla thyrsisalis on, in Florida, **386.**
Swingfog Machine, **457.**
Switzerland, *Chermes* on *Abies alba* in, **470**; Cicadellids transmitting virus disease of clover in, **470**; orchard pests in, **5, 6, 205, 293, 294, 469**; *Sparganothis pilleriana* on strawberry in, **77**; beneficial insects in, **6, 293, 469, 470**; new parasite of *Aphidoletes thompsoni* in, **470**; diseases of *Melolontha melolontha* in, **468.**
sycophanta, Calosoma.
syleptae, Eurytoma.
Sympiesis bimaculatipennis, parasite of *Parornix geminatella* in Virginia, **487.**
Sympiesis femoralis, parasite of *Oncocephala tuberculata* in Java, **478.**
Sympiesis massasoit, parasite of *Parornix geminatella* in Virginia, **487.**
Sympiesis sericeicornis, parasite of *Gracillaria syringella* in U.S.S.R., **243.**
Syngrapha circumflexa (see *Autographa*).
Syntomaspis (see *Torymus*).
Syria, pests of pistachio in, **238.**
Syringa persica, Gracillaria syringella on, in U.S.S.R., **243.**
Syringa vulgaris (Lilac), *Gracillaria syringella* on, in U.S.S.R., **243**; experiments with, as food-plant for *Hyphantria cunea*, **3.**
syringella, Gracillaria.
Syringopais temperatella, bionomics and control of, on cereals in Israel, **417.**
Syrphus arcuatus, predacious on *Chermes piceae* in Austria, **201**; parasite of, **201.**
Systoechus vulgaris, destroying grasshopper egg pods in U.S.A., **308.**
Systox (see Demeton).
szentivanyi, Amblypelta costalis.

T.

tabaci, Bemisia; *Thrips.*
tabacum, Hypopteromalus.
Tabanus striatus, destroying larvae of *Chilotraea polychrysa* in Malaya, **74.**
Tacebia parva, mite recorded as, on mulberry in Japan, **153.**
Tachina larvarum, parasite of *Estigmene acraea* in Arizona, **222.**
Tachinomyia, parasite of *Aphodius howitti* in Australia, **377.**
Tachyporus, feeding on wireworms in Nova Scotia, **11.**
tadici, Epilampsis.

taedae, Neodiprion.
Taeniothrips atratus, on glasshouse plants in Britain, **456.**
Taeniothrips inconsequens, bionomics and control of, on peach in France, **6.**
Taeniothrips laricivorus, bionomics of, on conifers in Germany and Austria, **66.**
Taeniothrips meridionalis (see *T. vulgatissimus*).
Taeniothrips nigricornis, transmitting new bacterial disease of beans in Queensland, **75.**
Taeniothrips simplex, on greenhouse *Gladiolus* in Britain, **456.**
Taeniothrips vulgatissimus, bionomics and control of, on peach in France, **6.**
Talc, as carrier for insecticides, **39, 271;** spores of *Beauveria bassiana* distributed in, **280.**
Tamarindus indica, as food-plant of *Caryedon gonagra*, **114, 304;** planting of, as measure against *Nomadacris septemfasciata*, **504.**
Tanganyika Territory, pests of cereals in, **39, 172;** *Pseudotheraptus wayi* on coconut in, **415;** coffee pests in, **366, 367, 409;** cotton pests in, **44, 116, 164;** *Myzus persicae* and virus disease of sweet potato in, **497;** *Cryptotermes dudleyi* in, **503;** locusts in, **252, 253, 302, 369, 410, 411, 504, 505, 506;** revision of Aphids of, **213.**
Tanymecus dilaticollis (on beet), in Bulgaria, **328;** in Rumania, **80.**
Tanymecus palliatus (on beet), in Bulgaria, **328;** in Rumania, **80.**
Tar Distillate, and oil or dinitrobutylphenol, spraying with, against *Panonychus ulmi*, **403, 404.**
Tarache nitidula, bionomics and control of, on cotton in India, **137.**
Tarsonemus, in food products and drugs in Japan, **379.**
Tarsonemus floricolus, **379.**
Tarsonemus pallidus (see *Steneotarsonemus*).
Tasmania, pests of pastures in, **75, 239;** Aphid-borne virus disease of *Trifolium subterraneum* in, **31;** *Trogoderma granarium* in imported barley in, **239.**
taxi, Eulecanium.
Taxus baccata, new Coccid on, in England, **25.**
TDE (see DDD).
Tea, pests of, in Ceylon, **113, 198;** pests of, in India, **113, 114;** Tetranychids on, in Japan, **153;** *Brevipalpus phoenicis* on, in Mauritius, **167.**
Teak (*Tectona grandis*), infestation of, by *Neotermes tectonae* in Java, **319;** experiments with *Teleonemia scrupulosa* and, **159.**
tectonae, Neotermes.
tectus, Ptinus.
Tedion (2, 4, 5, 4′-tetrachlorodiphenyl sulphone), in spray against *Panonychus* (*Metatetranychus*) *ulmi*, **37.**
Tegonotus, on tomato in Mauritius, **167.**
telarius, Tetranychus.
Telenomus, parasite of *Eurygaster integriceps* in Russia, **286.**
Telenomus dalmanni, parasite of *Ennomos quercinaria* in Germany, **78.**
Telenomus mormideae, parasite of *Solubea poecila* in British Guiana, **120.**
Telenomus tolli, parasite of *Scirpophaga* in French Cameroons, **365.**
Telenomus ullyetti, parasite of *Scirpophaga* in French Cameroons, **365.**
Teleonemia scrupulosa, spread and doubtful value against *Lantana* of, in Indonesia, **159;** experiments with teak and, **159.**
Telephone Cables, *Hofmannophila pseudospretella* damaging lead sheathing of, in British Columbia, **270.**
Temnoschoita basipennis, on banana in Uganda, **367.**
Temnoschoita erudita, on banana in Uganda, **367.**
Temnoschoita nigroplagiata, on banana in Uganda, **367, 409, 410;** characters differentiating *Cosmopolites sordidus* from, **410.**
temperatella, Syringopais.
Temperature, effects of: on locusts and grasshoppers, **193, 363, 369, 370;** on other insects, **8, 9, 24, 25, 27, 64, 65, 67, 125, 127, 129, 145, 148, 149, 150, 159, 194, 225, 239, 245, 246, 251, 259, 263, 264, 287, 294, 305, 306, 319, 320, 322, 326, 331, 346, 353, 361, 362, 363, 379, 419, 421, 423, 432, 476, 489, 503;** on mites, **41, 177, 224, 267, 268;** on reaction of *Melolontha* larvae to *Rickettsiella melolonthae*, **291;** on transmission of potato leaf-roll by Aphids, **19;** on permeability of arthropod cuticles, **82, 83;** on toxicity of insecticides, **49, 50, 473.**
templetoni, Elenchus.
Tenebrio molitor, water trap for detecting, in stored grain in Manitoba, **392;** susceptibility of, to pyrethrum in oil, **171;** effect of temperature on permeability of cuticle of, **83;** unfavourable host for *Trichogramma* spp., **399.**

Tenebrio obscurus, susceptibility of, to pyrethrum in oil, **171.**
Tenebroides mauritanicus, in imported groundnuts in Canada, **132**; use and effects of methyl bromide against, **132, 133, 313, 314**; susceptibility of, to pyrethrum in oil, **171.**
tenebrosus, Lamprophorus.
tenellus, Circulifer.
Tennessee, *Cotinis nitida* on tobacco in, **59**; outbreak and parasite of *Pseudaletia unipuncta* in, **102.**
tenthredinis, Mesoleius (see *M. aulicus*).
tenuicornis, Elenchus.
Tenuipalpus japonicus, sp. n., on *Diospyros kaki* in Japan, **275.**
Tenuipalpus obovatus (see *Brevipalpus*).
tenuipes, Diopsis.
tenuis, Cyrtopeltis (*Engytatus*); *Neanastatus.*
TEPP (see Tetraethyl Pyrophosphate).
terebrans, Dendroctonus.
terminifera, Chortoicetes.
Termites, in Africa, **151, 164, 199, 503**; in tropical America, **199, 503**; in Australia, **199, 357, 358, 479**; in Hawaii, **199**; in Indonesia, **319, 503**; in U.S.A., **89**; attacking living plants or trees, **151, 164, 319, 358**; infesting timber, **89, 151, 358, 503**; lists of timbers resistant to, **151**; tests of chemicals for protecting timber against, **151, 198, 199, 215, 479**; fumigation of buildings against, **89**; other measures and experiments against, **151, 164, 447, 479**; laboratory maintenance and rearing of, **214, 503**; influence of humidity on, **459**; new species of, **357.** (See *Cryptotermes* spp.)
terraenovae, Phormia.
tertia, Dappula.
testaceicollis, Pristomerus.
testaceipes, Aphidius.
testaceus, Meteorus; *Physcus.*
testulalis, Maruca.
Tetanops myopaeformis, insecticides against, on beet in North Dakota, **123, 124, 280.**
tetensi, Dasyneura.
2, 4, 5, 4′-Tetrachlorodiphenyl Sulphone (see Tedion).
Tetraethyl Pyrophosphate, against Aphids, **115, 256**; against other insects, **34, 35, 217**; against mites, **34, 429**; in sprays, **34, 35, 115, 217, 256**; aircraft application of dust of Aramite and, **429**; and schradan, **256.**
tetranychi, Feltiella.
Tetranychus, on vegetables in Mauritius, **167**; mite predacious on, in Nova Scotia, **268**; systemic sprays against, on ornamental plants in U.S.S.R., **285, 286.**
Tetranychus atlanticus (in U.S.A.), on cotton, **58**; on leguminous plants, **227, 260**; on strawberry, **260**; bionomics of, **260**; sprays against, **58, 227.**
Tetranychus bimaculatus (see *T. telarius*).
Tetranychus cinnabarinus (carmine form of *T. telarius* complex), in Egypt, **26, 27**; in Maryland, **57, 439**; bionomics of, **27, 439**; insects predacious on, **27**; not resistant to phosphorus compounds, **57, 439**; cross-breeding experiments showing distinctness of, from other mites of complex, **57, 58, 261, 262, 439**; synonymy of, **261.**
Tetranychus cucurbitacearum (see *T. cinnabarinus*).
Tetranychus cucurbitae, on peach in Mauritius, **167.**
Tetranychus desertorum, acaricides against, on cotton in U.S.A., **48, 49, 58**; *Scolothrips sexmaculatus* predacious on, **58.**
Tetranychus deviatarsus (see *T. ludeni*).
Tetranychus kanzawai, food-plants of, in Japan, **153.**
Tetranychus lobosus, sp. n., on cotton, etc., in U.S.A., **261**; crossing experiments with related mites and, **261, 262.**
Tetranychus ludeni, **167**; acaricides against, on lima beans in California, **176.**
Tetranychus marianae, bionomics of, on solanaceous crops and groundnut in Mauritius, **167**; insects predacious on, **167.**
Tetranychus multisetis (see *T. cinnabarinus*).
Tetranychus pacificus, sprays against, on almond in California, **281, 282.**
Tetranychus telarius, in Canada, **85, 267**; in Germany, **203, 402**; in Hawaii, **103, 214**; in Japan, **153**; in Jordan, **507**; in U.S.S.R., **70**; in U.S.A., **47, 48, 57, 102, 176, 281, 424, 439, 451**; on beans, **103, 176, 214, 432, 439**; on cotton, **46, 48, 183, 424, 432, 433, 507**; on fruit trees, **85, 102, 281**; on small fruits, **70, 451**; on mulberry and tea, **153**; on tomato and watermelon, **507**; bionomics of, **439, 507**; dissemination of, by wind, **103, 104**; Coccinellids predacious on, **507**; mites predacious on, **47, 85, 203, 267, 268, 402, 403**; dusts against, **176**; sprays against, **48, 176, 214, 281, 451, 507**; laboratory tests of organic sulphides against eggs and larvae of, **271–273, 380–382**; tests and uses of systemic

acaricides against, **46, 183, 424, 451;** strains of, resistant to phosphorus compounds, **57, 439;** inheritance of resistance to malathion in, **57;** insecticides favouring, **507;** effects of fertiliser and soil insecticides on infestation of plants by, **102, 432;** cross-breeding experiments with mites of complex of, **57, 58, 261, 262, 439;** carmine form of (see *T. cinnabarinus*).
Tetranychus truncatus, sp. n., on mulberry in Japan, **153.**
Tetranychus tumidus (on cotton in U.S.A.), systemic acaricides against, **449, 450;** effect of soil insecticides on populations of, **432.**
Tetranychus urticae (see *T. telarius*).
Tetra-n-propyl Dithionopyrophosphate, in dusts against *Tetranychus telarius*, **176.**
Tetrastichus, parasitising *Pulvinaria mesembryanthemi* in Argentina, **116;** parasitising *Agrilus viridis* in Germany, **247;** parasitising Cecidomyiids in Ontario and India, **391, 413.**
Tetrastichus brevistylus (see *Aprostocetus*).
Tetrastichus brontispae, failure to establish, against *Brontispa longissima* in Solomon Islands, **300.**
Tetrastichus cyclogaster, parasite of *Gracillaria syringella* in U.S.S.R., **243.**
Tetrastichus cydoniae, parasite of *Epilachna similis* in French Cameroons, **365.**
Tetrastichus diopsisi (see *Aprostocetus*).
Tetrastichus dipterae, sp. n., parasite of *Pachylophus* in French Cameroons, **30, 111.**
Tetrastichus epilachnae, parasite of Coccinellids in France, **395.**
Tetrastichus hunteri, **391.**
Tetrastichus malacosomae, parasite of *Malacosoma* in U.S.A., **384.**
Tetrastichus pachydiplosisae, parasite of *Pachydiplosis oryzae* in French Cameroons, **30, 111.**
Tetrastichus pachylophusae (see *Aprostocetus*).
Tetrastichus pyrillae, parasite of *Pyrilla perpusilla* in India, **422.**
Tetrastichus rapo, parasite of *Plutella maculipennis* in Bulgaria, **329.**
Tetrastichus sesamiae, hosts of, in French Cameroons, **30, 365.**
Tetrax, **26, 34.**
Tetropium cinnamopterum, infesting windthrown softwoods in New York, **126.**
Tettigella spectra, on rice in French Cameroons, **365;** parasites of, **365.**
Tettigonia viridissima, transmitting tobacco mosaic in Germany, **248.**
Tettigoniella albida (see *Tettigella spectra*).
teukton, *Trogoderma*.
texanus, *Chelonus*; *Ectemnius*.
Texas, pests of cereals in, **310, 341;** pests of cotton in, **48, 49, 51, 57, 60, 61, 62, 91, 100, 174, 221, 346, 352, 435, 436, 437, 438, 440, 443, 444, 445, 446, 490;** *Myzocallis maculata* on lucerne in, **175;** pine sawfly in, **264;** *Conotrachelus nenuphar* on stone fruits in, **353;** pests of vegetables in, **92, 349, 430;** *Dissosteira longipennis* in, **309;** insects predacious on pests in, **310, 311, 335;** attempted introduction of beneficial insects from India into, **352;** Coccinellid introduced into Morocco from, against *Parlatoria blanchardii*, **297;** *Trogoderma boron* imported into Britain from, **149.**
Thamnophthorus, probably infesting avocado seeds in Ecuador, **98.**
Thecocarcelia pelmatoprocta, parasite of Hesperiids in French Cameroons, **265.**
theivora, *Mahasena*.
Thelohania hyphantriae, sp. n., use of, infecting *Hyphantria cunea* in Czechoslovakia, **289, 290;** susceptibility of other Lepidoptera to, **289.**
theobroma, *Distantiella*.
theobromae, *Amblypelta*; *Nodonota*.
Theresimima ampelophaga, bionomics of, on vines in Hungary, **457, 458;** parasite of, **458.**
Therioaphis (see *Myzocallis*).
Thespesia populnea, *Anthonomus grandis* on, in Texas, **62.**
Thimet [O,O-diethyl S-ethylthiomethyl phosphorodithioate (Am. Cyanamid 3911)], against Aleyrodid, **424;** against Aphids, **92, 175, 177, 336, 348, 424, 436, 449, 450, 451, 496, 499, 500;** against Cicadellids, **174, 424, 425;** against Mirids, **92, 174, 436;** against Coleoptera, **92, 219, 341, 424, 436, 449, 450, 451;** against Lepidoptera, **56, 220, 228, 259, 260, 424, 425, 449, 487;** against *Liriomyza*, **92, 424, 436;** against *Tetranychus* spp., **176, 424, 449, 450, 451;** against Thysanoptera, **92, 424, 436, 449;** not affecting parasites of *Parornix geminatella*, **487;** in dusts, **177;** in granules, **56, 175, 177, 424, 425;** in sprays, **176, 220, 259, 336, 424, 425, 450, 451, 487, 496;** tests of systemic action and other methods of application of, **92, 174, 177, 222, 228, 341, 348, 424, 425, 435, 436, 449, 450, 451, 496, 499;** effects of, on plants, **177, 222, 341, 425,**

449, 500; metabolism of, in plants, **228, 229**; synthesis and properties of metabolites of, **229**; radioactive-tracer studies of, **228, 424.**
Thiocyanates, factors affecting fumigant toxicity of alkyl, **207.**
Thiodan, composition, properties and isomers of, **141, 346**; tests and uses of, against insects, **141, 346, 443, 444**; in spray against *Steneotarsonemus pallidus*, **442.**
Thiodan Alcohol, structure and properties of, **346.**
Thiometon (see O,O-Dimethyl S-2-(Ethylthio)ethyl Phosphorodithioate).
Thiram (see Bis(dimethylthiocarbamoyl) Disulphide).
Thlaspi arvense, as food-plant of *Circulifer tenellus* in Idaho, **122.**
Thomasiniana lavandulae, on *Lavandula* spp. in France, **206, 362**; bionomics of, **206**; measures against, **362.**
Thompson, Dr. W. R., retirement of, **241.**
thompsoni, Aphidoletes.
thoracica, Diopsis.
thoracicus, Triaspis (*Sigalphus*).
Thrips angusticeps, bionomics of forms of, on flax and cereals in Holland, **331**; measures against, **331.**
Thrips fuscipennis, on peach in Scotland, **456.**
Thrips tabaci, in glasshouses in Britain, **456**; on beans in Hawaii, **214**; in Queensland, **478**; in U.S.A., **349, 449**; on cotton, **449**; on onion, **349, 478**; insecticides against, **214, 349, 449, 478**; strain of, resistant to chlorinated hydrocarbons, **349.**
Thrips, Larch (see *Taeniothrips laricivorus*).
Thrips, Lily Bulb (see *Liothrips vaneeckei*).
thuiella, Argyresthia.
Thuja occidentalis, Lepidoptera on, in New Brunswick, **332, 391.**
Thuja plicata, Pseudohylesinus nebulosus on, in British Columbia, **10.**
thujaëlla, Recurvaria.
thunbergi, Bruchidius (see *B. chinensis*).
thurberiella, Bucculatrix.
Thyanta custator, causing cat-facing of peaches in Ohio, **434.**
Thyreophagus entomophagus, technique and results of studies of egg density and reproduction of, in flour, **41.**
thyrsisalis, Macalla.
Thysanoptera, transmitting bacterial diseases of beans, **75**; predacious on mites, **27, 58**; review of species of, in glasshouses in Britain, **456.**
Thysanus, parasite of *Agrilus anxius* in New Brunswick, **270.**
tibialis, Tomicobia.
tigrina, Coenosia.
tigris, Diastema.
tiliae, Typhlodromus.
Timber, Coleoptera infesting, **78, 126, 158, 183, 240, 251, 265, 266, 274, 408, 409, 463**; termites attacking, **151, 199, 358, 479**; lists of termite-resistant species of, in Belgian Congo, **151**; treatments of, **126, 151, 199, 409, 479.**
Timothy Grass (see *Phleum pratense*).
Tineola bisselliella, probable stimulation of latent virus in other insects by virus from, **198.**
Tiofos (see Parathion).
Tiphia femorata (parasite of Lamellicorns), bionomics of, in Hungary, **68.**
Tiphia minuta, parasite of Lamellicorns in Hungary, **68.**
Tiphia morio (parasite of Lamellicorns), bionomics of, in Hungary and France, **68, 279.**
Tiphia polita (parasite of Lamellicorns), bionomics of, in Hungary, **68.**
Tiphia ruficornis (see *T. polita*).
Tipnus unicolor, bionomics of, in Britain, **65.**
Tipula paludosa, establishment and control of, in Nova Scotia, **483.**
tipulae, Leptacis.
tischeriae, Apanteles.
Tobacco, *Tettigonia viridissima* on, in Germany, **248**; *Plusia orichalcea* on, in India, **13**; pests of, in Philippines, **107, 154, 354**; *Vasates* on, in Queensland, **32**; pests of, in S. Rhodesia, **166, 408**; pests of, in U.S.A., **54, 59, 217, 223, 227, 248, 404**; experiments with insects and virus diseases of, **248, 498**; used in experiments with *Myzus persicae* and potato virus, **155**; *Bracon gelechiae* not developing in *P. orichalcea* on, **13**; injured by calcium arsenate, **107**; malathion residues on, **232, 233.**
Tobacco (Stored), *Lasioderma serricorne* in, **212, 225**; (waste), as carrier for DDT dusts or granules, **20, 56.**
Tobacco Cricket (see *Brachytrupes membranaceus*).
Tobacco Whitefly (see *Bemisia tabaci*).
togata, Eupithecia.
tolli, Telenomus.
Tomato, pests of, in Canada, **266, 389**; *Dacus cucurbitae* on, in Hawaii, **507, 508**; *Bemisia tabaci* on, in Israel, **419**; *Tetranychus telarius* on, in Jordan, **507**; Tetranychid on, in Mauritius,

168; *Ceresa bubalus* on, in Moldavia, 245; pests of, in Queensland, 32, 258; pests of, in U.S.A., 50, 217, 227, 340, 345; insects transmitting virus diseases of, 258, 492; *Liriomyza langei* not transmitting tobacco mosaic to, 498; killed by sulphuryl-fluoride fumigation, 88; not injured by chlorinated insecticides, 471; (fruit), *Drosophila* infesting, 345; recovery of insect fragments from processed, 266; injured by sulphuryl-fluoride fumigation, 88; (juice), insecticide residues in, 389; in medium for rearing *Drosophila*, 132.

Tomato Fruitworm (see *Heliothis zea*).

Tomato Russet Mite (see *Vasates lycopersici*).

Tomicobia tibialis, bionomics of, parasitising *Ips* in Alberta, 269.

Tömösváryella singula, parasite of *Tettigella spectra* in French Cameroons, 366.

toreuta, *Cydia* (*Laspeyresia*).

Torres Straits Islands, *Amblypelta lutescens* in, 412.

torrida, *Austroagallia*.

tortricis, *Copidosoma*.

Tortrix rosana, bionomics of, on fruit trees in Switzerland, 5, 6, 293; insect enemies of, 6, 293, 399; sampling of distributions of egg-masses and egg-parasite of, 293; effect of birds on egg-masses of, 293, 294; sprays against, 6.

Torymus varians (*druparum*), spray against, on apple in Sweden, 117; synonymy of, 117.

Toumeyella, soil treatment with insecticides against, on coffee in Venezuela, 499.

Toumeyella numismatica, insecticides against, on *Pinus banksiana* in Wisconsin, 486.

Toxaphene, against Aphids, 175, 226, 227, 499, 500; against Mirids, 44, 92, 107, 228, 444; against other Hemiptera, 34, 35, 226, 227, 228, 500; against Curculionids, 48, 52, 92, 107, 181, 438, 441, 443; strains of *Anthonomus grandis* resistant to, 344; against Lamellicorns, 60, 99, 178; against other Coleoptera, 178, 226, 227, 368; against Diptera, 178, 271, 430, 456; against Noctuids, 44, 48, 49, 50, 52, 92, 93, 100, 154, 226, 227, 388, 425, 440, 444; against Pyralids, 34, 35, 56, 351; against other Lepidoptera, 55, 71, 95, 107, 221, 226, 227, 299, 300; strain of *Estigmene acraea* resistant to, 221; against mites, 45, 50; against Orthoptera, 154, 228; against *Reticulitermes* spp., 225, 447; against Thysanoptera, 6, 349, 436, 445, 446; destroying beneficial arthropods, 300; laboratory tests of toxicity of, to insects, 49, 154, 155, 174, 237, 344, 419, 427; in fat of pigs from treated pastures, 100; in liquefied-gas aerosols, 226, 227; in dusts, 44, 45, 50, 60, 92, 93, 95 174, 221, 271, 438; in granules, 56, 99, 441; in sprays, 6, 34, 35, 44, 45, 48, 49, 50, 52, 55, 71, 92, 95, 100, 107, 154, 175, 178, 181, 221, 228, 299, 300, 349, 351, 368, 419, 425, 436, 440, 443, 444, 445, 446, 456, 499, 500; applied from aircraft, 71, 221, 299, 300; soil treatments with, 225, 388, 430, 500; persistence of, in soil, 225; plants injured by, 227, 471; and BHC, 221; and chlordane, 221; and DDT, 44, 45, 50, 52, 95, 100, 175, 221, 228, 425, 443, 444; and malathion, 227, 443; in oil, 299, 300; and sulphur, 221, 438; and zineb, 107.

Toxoptera citricidus (vector of tristeza disease of *Citrus*), not occurring in Egypt, 506.

Toxoptera graminum (on cereals), parasite of, in Argentina and Uruguay, 76; in U.S.A., 19, 178, 341; characteristics and evaluation of injury by, 178, 341; transmitting virus disease, 19; measures against, 341.

trachypterus, *Chrotogonus*.

transversoguttata, *Coccinella*.

Trapa bispinosa, *Galerucella birmanica* on, in India, 163.

trapezalis, *Marasmia*.

Traps, for studying flights of Aphids, 16, 51; for collecting Cicadellids in peach trees, 494; for fruit-flies, 349, 350; use of, in rearing *Drosophila*, 351, 352; for detecting insects in stored grain, 392.

Trialeurodes abutilonea, seed treatment with Thimet controlling, on cotton in California, 424.

Trialeurodes vaporariorum, sprays against, on beans in Hawaii, 214.

Triaspis curculionis, parasite of *Conotrachelus nenuphar* in Virginia, 219; killed by DDT, 219.

Triaspis obscurellus, parasite of *Ceutorhynchus pleurostigma* in Germany, 293.

Triaspis thoracicus, parasitising *Bruchus lentis* in Algeria, 112; parasite of, 112.

Tribolium, used in tests of treatments for packaged foods, 353, 362.

Tribolium castaneum, imported into Canada, 132; in Nigeria, 150, 273; in Oregon, 173; in Venezuela, 452; in

stored groundnuts, **132, 150, 273;** in cereals and cereal products, **173, 362, 452;** study of movement of, in wheat stored in bags, **162;** methyl-bromide fumigation against, **132, 133;** vacuum treatment of packaged foods against, **362;** other measures and experiments against, **150, 171, 172;** differences in susceptibility of strains of, to insecticides, **133.**

Tribolium confusum, in Britain, **242;** in Canada, **132, 392;** in Libya, **297;** in Nigeria, **273;** in U.S.A., **47;** in stored dates, **297;** in stored groundnuts, **132, 273;** in stored grain or flour, **47, 242, 298, 392, 442, 448;** amount of food required by, **173;** mortality of, at low temperatures, **235;** tests and use of fumigants against, **46, 88, 132, 133, 242, 298;** BHC-impregnated sawdust not protecting maize from, **47;** laboratory tests of toxicity of insecticides to, **171, 236, 237;** reduced toxicity of sodium fluoride in flour conditioned by, **442;** not affected by translocated BHC in maize seed, **54;** water trap ineffective for, **392;** method for counting larvae of, **448.**

Tribolium destructor, tests of susceptibility of, to pyrethrum and oil, **171, 172.**

Trichispa sericea, on rice in French Cameroons, **365.**

Trichlorobenzene, treatment of trees and logs with oil solution of, against *Dendroctonus pseudotsugae*, **218.**

N-(Trichloromethylthio)-4-cyclohexene-1, 2-dicarboximide (see Captan).

Trichogramma, parasitising eggs of moths in Peru and Virginia, **454, 487;** differentiation of species of, by biological and morphological criteria, **398–400.**

Trichogramma cacoeciae, egg-parasite of *Tortrix rosana* in central Europe, **6, 293, 399;** sampling of distributions of host eggs and, **392;** bionomics of, **293, 399;** ecology, host range and specific status of, **398–400.**

Trichogramma embryophagum, ecology of, in central Europe, **399;** bionomics, host range and specific status of, **398–400.**

Trichogramma ethiopicum, hosts of, in French Cameroons, **30, 365.**

Trichogramma evanescens, parasitising eggs of Lepidoptera in Europe, **288, 399, 457;** experimental hosts of, **288, 399;** criteria differentiating related species from, **398–400.**

Trichogramma evanescens cacoeciae (see *T. cacoeciae*).

Trichogramma minutum (parasitising eggs of moths), in British Guiana, **356;** in Guadeloupe, **135;** in U.S.A., **100, 399;** biological and morphological characteristics of, **399, 400.**

Trichogramma semblidis, parasitising eggs of *Sialis lutaria* in central Europe, **399;** biology, host range and specific status of, **398–400.**

Trichogrammatoidea nana, failure to establish, against *Brontispa longissima* in Solomon Islands, **300.**

Trichomalus fasciatus, parasite of *Ceutorhynchus assimilis* in Idaho, **382;** bionomics of, **382.**

Trichoplusia ni, in Ontario, **193;** in U.S.A., **92, 100, 227, 386, 427, 428, 443, 444;** on cotton, **427, 443, 444;** on crucifers, **92, 193, 227, 386, 427;** on lettuce, **100, 427, 428;** importance and use of virus disease of, **427, 428;** insecticides against, **92, 100, 227, 386;** DDT-resistant strain of, **193.**

Trichopoda pennipes, differences in hosts and distribution of strains of, in U.S.A., **437;** rearing and introduction into California of strain of, attacking *Anasa tristis*, **437.**

Trichopria cubensis, parasite of *Paratheresia claripalpis* in Trinidad, **135.**

Trichopria oriphila, parasite of *Diopsis tenuipes* in French Cameroons, **30.**

Trichosanthes dioica, *Margaronia indica* on, in India, **137.**

Trichospilus pupivora, parasite of *Cryptophlebia williamsi* in Mauritius, **421.**

Triclistus globulipes, parasite of *Choristoneura murinana* in France, **466.**

trifasciatus, *Closterocerus.*

Trifidaphis phaseoli (see *Smynthurodes betae*).

trifolii, *Bruchidius*; *Myzocallis* (*Pterocallidium*).

Trifolium (see Clover).

Trifolium alexandrinum, pests of, in Egypt, **26, 27, 28, 230;** *Myzocallis maculata* on, in Israel, **230.**

Trifolium hybridum, weevils on, in Finland, **1, 361;** Cicadellids and virus diseases infecting, in Japan and U.S.A., **35, 492.**

Trifolium incarnatum, *Macrosteles fascifrons* transmitting virus disease to, **492.**

Trifolium medium, *Hypera nigrirostris* on, in Finland, **1;** *Myzocallis trifolii* on, in Kansas, **214.**

Trifolium pratense (Red Clover), Cicadellids on, in Japan and Britain, **35,**

146; pests of, in U.S.A., **187, 214, 216, 220**; Cicadellids and virus diseases infecting, **35, 146, 492.**
Trifolium repens (White Clover), insects and virus diseases of, in Europe, **330, 470**; *Hypera nigrirostris* experimentally developing on, **1.**
Trifolium repens latum (Ladino Clover), *Cotinis nitida* injuring, in U.S.A., **99**; *Macrosteles fascifrons* transmitting virus disease to, **492.**
Trifolium subterraneum (in Australia), *Halotydeus destructor* on, **277, 278**; insects and virus diseases of, **31**; in relation to *Aphodius howitti* and *Oncopera* spp., **75, 376, 378.**
trifurcata, Cerotoma.
Trigonella, experiments with *Myzocallis* spp. and species of, **214.**
Trigonoderus tristis, bionomics of, parasitising *Anobium punctatum* in Norway, **463.**
Trimeromicrus maculatus, parasite of *Ceutorhynchus assimilis* in Idaho, **382.**
Trinidad, *Leucoptera coffeella* in, **409**; *Pseudaulacaspis pentagona* in, **268, 269**; sugar-cane moth borers in, **134, 135**; beneficial insects in, **134, 135, 268, 269**; beneficial insects introduced into other countries from, **73, 74, 269**; suggested introduction of bird into Bermuda from, against lizards, **416.**
Triophtydeus, **402.**
Trioxys utilis, parasite of *Myzocallis maculata* in Asia and Italy, **231**; introduced into U.S.A., **231.**
tripunctula, Erythroneura.
triquetra, Homalodisca.
tristicolor, Orius.
tristigmus, Euschistus.
tristis, Anasa; *Delassor*; *Trigonoderus.*
Trithion (O,O-diethyl S-p-chlorophenylthiomethyl phosphorodithioate), in sprays: against Aphids, **124, 336**; against *Cydia pomonella*, **323**; against mites, **224, 225, 261, 429.**
tritici, Contarinia; *Euxoa*; *Frankliniella.*
Tritneptis hemerocampae, parasitising cocoons of *Cydia molesta* in New Jersey, **237.**
tritoma, Loxotropa.
Triton B-1956, in insecticide formulations, **20, 218.**
Triton X-100, formulations of ethylene dibromide with, **218.**
Triton X-155, as an emulsifier, **470.**
Triton X-160, tests of, as insecticide and acaricide, **385, 386**; parathion spray improved by, **386.**
triturata, Spodoptera.
trivittata, Acalymma.
Trochilium apiforme, bionomics and control of, on poplar in U.S.S.R., **69.**
Trogoderma, keys to adults and larvae of Nearctic species of, **262.**
Trogoderma glabrum (*boron*), in imported cottonseed meal in Britain, **149**; in U.S.A., **149, 262, 333, 334**; importance of, in stored cereals, **333, 334**; fumigants against, **334**; synonymy and distribution of, **262.**
Trogoderma granarium (in stored products), outbreak of, in South Africa, **407**; apparent absence of, in Australia, **239**; in Nigeria, **150**; in U.S.A., **237, 238, 262**; factors affecting distribution and increase of, **237, 238**; inert dusts against, **150**; toxicity of insecticides to, **236, 237.**
Trogoderma inclusum, in Britain, **263**; in U.S.A., **263, 334**; in stored grain, **334**; characters distinguishing, from *T. versicolor*, **263.**
Trogoderma parabile, in stored grain in Colorado, **334.**
Trogoderma teukton, sp. n., in silk and stored grain in U.S.A., **262, 334.**
Trogoderma versicolor, in continental Europe, **263**; tests of oil sprays and deposits against, **172**; characters distinguishing *T. inclusum* from, **263.**
Trox procerus, bionomics and distribution of, destroying eggs of *Schistocerca gregaria*, **410.**
truncatus, Tetranychus.
Trybliographa rapae, parasite of *Hylemyia brassicae* in Czechoslovakia, **326.**
tryoni, Dacus (*Strumeta*).
Trypodendron bivittatum, infesting windthrown softwood trees in New York, **126.**
Trypodendron lineatum, types and identification of injury by, in softwood logs in British Columbia, **183, 184, 265.**
Tsuga heterophylla, Coleoptera in trees and logs of, in British Columbia, **10, 265, 266.**
tsugae, Xyleborus (*Xyleborinus*).
tuberculata, Oncocephala.
tuberis, Epitrix.
tuberosa, Platygaster.
Tulip, *Myzus ascalonicus* on, in Denmark, **79**; *Brevipalpus inornatus* on, in Japan, **153.**
tulipae, Aceria.
tulipaellus, Rhopalosiphoninus (*Rhopalosiphum*) *staphyleae.*
Tumblemustard (see *Norta altissima*).
tumidus, Tetranychus.
Tunisia, natural enemies of *Parlatoria blanchardii* on date in, **296.**
turcicus, Cryptolestes (*Laemophloeus*).

Turf, *Sericesthis pruinosa* in, in Australia, **191**; insects infesting, in U.S.A. and Canada, **231, 236, 483**; damaged by *Spodoptera mauritia* in Hawaii, **173**. effect of chlordane on, **231**; persistence of DDT in, **427**. (See Grasses.)
turionellae, Pimpla.
Turkey, cereal pests in, **152, 364**; *Cryptolestes* spp. in mills in, **42**; *Myzocallis* spp. on lucerne and clovers in, **230**; parasites of *M. maculata* in, **231.**
Turmeric (see *Curcuma longa*).
Turnip, *Phyllotreta* transmitting virus of, in Britain, **144**; pests of, in U.S.A., **178, 382, 386, 451**; preference of *Myzus persicae* for sprayed seedlings of, **300**; Thimet residues in, **451**; injured by Triton X-160, **386.**
Turnip Rape, *Ceutorhynchus pleurostigma* on, in Germany, **292.**
Turpentine Beetle, Black (see *Dendroctonus terebrans*).
Tychius flavus, bionomics of, on lucerne in Yugoslavia, **3.**
Tydeus, experiments with predacious mites and, in Germany, **402, 403.**
Tylomyza pinguis, on lettuce in Egypt, **24.**
Typha australis, Lepidoptera infesting, in Uganda, **303.**
Typhaea stercorea, in stored cereals in Oregon, **173.**
Typhlocyba prunicola, bionomics of, on prune in California, **309, 310.**
Typhlocyba quercus, bionomics of, on prune and cherry in California, **309, 310.**
Typhlocyba rosae, Thiodan against, **141.**
Typhlodromus (predacious on fruit-tree Tetranychids), in Germany, **292**; in Quebec, **85**; effect of fungicides on, **85.**
Typhlodromus aberrans, predacious on orchard mites in Germany, **402, 403**; bionomics of, **403.**
Typhlodromus caudatus, bionomics of, predacious on *Raoiella indica* in Mauritius, **168.**
Typhlodromus cucumeris, value and use of, against *Steneotarsonemus pallidus* in California, **311**; predacious on apple mites in Germany, **203, 402**; bionomics of, **203.**
Typhlodromus fallacis (predacious on Tetranychids), bionomics of, in Nova Scotia, **268**; in Texas, **311.**
Typhlodromus mesembrinus, sp. n., predacious on *Oligonychus pratensis* in Texas, **311.**
Typhlodromus reticulatus, value and use of, against *Steneotarsonemus pallidus* in California, **311.**
Typhlodromus soleiger, bionomics of, predacious on orchard mites in Germany, **402, 403.**
Typhlodromus tiliae (predacious on orchard mites), in Germany, **402**; in Nova Scotia, **190, 267, 268**; bionomics of, **267, 268, 402**; effect of sprays on, **190.**
Typhlodromus tiliarum, predacious on orchard mites in Germany, **402, 403**; bionomics of, **403.**
Typhlodromus vitis (see *T. aberrans*).
typographus, Ips.
Tyroglyphus farinae (in flour), technique for determining egg density of, **41**; testing grain protectants against, **53.**

U.

ubiquitus, Pronematus.
Uganda, weevils on banana in, **367, 409**; cotton pests in, **43, 44, 198, 455, 502**; Lepidoptera on graminaceous plants in, **303, 304**; Coccid on guava in, **299**; *Bemisia tabaci* and virus disease of sweet potato in, **497**; Aphids of, **213**; *Cryptolestes ugandae* in, **42**; beneficial insects in, **304, 502**; virus disease of *Heliothis armigera* in, **198, 455.**
ugandae, Cryptolestes.
Ulex europaeus, establishment of *Apion ulicis* against, in California, **347.**
ulicis, Apion.
ullyetti, Telenomus.
ulmi, Lepidosaphes; *Panonychus* (*Metatetranychus*).
ultor, Apanteles.
Ultra-violet Light, effectiveness of, in light-traps for insects, **223**; use of, in technique for determining infestation of cotton products by *Platyedra gossypiella*, **449.**
Unaspis euonymi, sprays against, on *Euonymus* in Maryland, **97.**
undata, Oncometopia.
undecimpunctata, Diabrotica.
undulata, Phyllotreta.
unicolor, Tipnus.
Union of Soviet Socialist Republics, beet pests in, **80, 244**; pests of cereals in, **8–10, 80, 81, 244, 285, 286, 287**; forest pests in, **68, 69**; orchard pests in, **68, 245, 285**; mites on small fruits in, **69, 70**; pests of ornamental plants in, **243, 244, 285**; *Recurvaria pistaciicola* on pistachio in, **238**; *Ceresa bubalus* on vegetables in, **245**; outbreak of *Laphygma exigua* in, **244**; bibliography of locusts and grasshoppers in, **360**; beneficial insects in, **244, 286, 287.**

unipuncta, *Pseudaletia*.
United States of America, pests of cereals in, **101, 102, 122, 385**; cotton pests in, **449, 450**; insects on conifers in, **62, 125, 263, 315, 427**; Scolytids and Dutch elm disease in, **387, 483**; Cicadellids and X-disease of peach in, **494**; *Eriophyes pyri* on pear in, **448**; *Capitophorus fragaefolii* and strawberry viruses in, **202**; *Myzus persicae* on tobacco in, **404**; grasshopper transmitting tobacco mosaic in, **248**; pests of stored products in, **42, 237, 238, 262, 263, 352, 442**; ecology of Elaterids in, **384**; *Kalotermes minor* in, **89**; diseases of insects in, **190, 386**; introduction of parasites of *Myzocallis maculata* into, **230, 231**; risk of introduction of *Dacus dorsalis* into, **91**; *Bracon gelechiae* introduced into India from, **474**; book on arthropods of western, **406**. (See also under the individual States.)
Unspotted Leaf Miner (see *Parornix geminatella*).
Uropoda fallax, attacking *Pediculoides* in Alberta, **333**.
urozonus, *Eupelmus*.
urticae, *Aglais*; *Tetranychus* (see *T. telarius*).
Uruguay, *Cryptolestes turcicus* in mills in, **42**; grasshoppers in, **406**; parasite of *Toxoptera graminum* in, **76**.
Utah, Scolytid on pines in, **263**.
Utetheisa pulchella, on *Crotalaria juncea* in India, **161, 475**.
utilis, *Trioxys*.

V.

vaccinii, *Frankliniella*; *Mineola*; *Scleroracus* (*Ophiola*).
Vacuum, experiments on treatment of packaged foodstuffs with, against insects, **362, 363**.
vagus, *Conoderus* (see *C. falli*).
vaneeckei, *Liothrips*.
Vanessa cardui, latent viruses in other Lepidoptera possibly stimulated by virus from, **198**.
vaporariorum, *Trialeurodes*.
varia, *Aeneolamia*.
variabilis, *Dermacentor*; *Hypera* (*Phytonomus*).
varians, *Torymus* (*Syntomaspis*).
varicornis, *Leptocorisa*.
variegatus, *Zonocerus*.
variolarius, *Euschistus*.
varitarsum, *Agrypon*.
varium, *Apion* (*Piezotrachelus*).
varivestis, *Epilachna*.
Vasates fockeui, acaricides against, on cherry in Washington, **428, 429**.
Vasates lycopersici, in California, **50**; in Queensland, **32**; acaricides against, on tomato, **32, 50**; on other solanaceous plants, **32**.
Vasates schlechtendali, on apple in British Columbia, **481**.
vastatrix, *Phylloxera* (see *P. vitifoliae*).
vaulogeri, *Clania*.
vellicatus, *Exenterus*.
velox, *Aoplus*.
velutinana, *Eulia* (*Argyrotaenia*).
venata, *Anaphe*.
Venezuela, *Laphygma frugiperda* on cereals in, **453**; Coccids on coffee in, **498, 499**; Cicadellids and virus disease of rice in, **453**; sugar-cane pests in, **355, 356, 452, 453**; pests of stored grain in, **451, 452**; biological control of *Diatraea* spp. in, **355, 356**.
ventralis, *Chrysopa*.
verdia, *Empoasca*.
Vermiculite, as granular carrier for insecticides, **56, 91, 99, 124**.
vernalis, *Calosota*.
versicolor, *Meteorus*; *Trogoderma*.
vesicularis, *Eupelmella*.
Vespula vulgaris, uptake of dust deposits by, **41**.
vestitus, *Hylesinus* (*Chaetophorus*).
Vicia faba (see Beans, Broad).
Vicia unijuga, *Ophiola flavopicta* transmitting virus infecting, in Japan, **35, 36**.
vicina, *Calliphora*.
vicinus, *Callosobruchus* (*Bruchus*) (see *C. maculatus*).
Victoria, Aphid-borne virus of *Trifolium subterraneum* in, **31**.
villiger, *Ptinus*.
Vine, Grape, *Planococcus citri* on, in South Africa, **299**; *Brevipalpus* spp. on, in Egypt, **28**; *Phylloxera vitifoliae* on, in France, **138**; *Theresimima ampelophaga* on, in Hungary, **457**; *Anoplocnemis phasiana* on, in India, **137**; *Tetranychus kanzawai* on, in Japan, **153**; pests of, in U.S.A., **55, 56, 86, 337, 342, 429, 494**; Cicadellids and virus disease of, **494**; sorption of dimefox from soil by, **138**; insecticide residues in fruits of, **138, 337**.
vininga, *Aslauga*.
vinsoni, *Stethorus*.
Vinyl Films, tests of permeability of, by methyl bromide, **342**.
Viola odorata, *Dasyneura affinis* on, in Germany, **245**.
violae, *Ceraphron* (*Calliceras*) *clavatus*.
Violet (see *Viola odorata*).

virens, Apion.
virescens, Heliothis.
virgata, Ferrisiana (*Ferrisia*).
virgifera, Diabrotica.
Virginia, pests of clover in, **99, 260**; weevils on lucerne in, **185, 441**; orchard pests in, **219, 447, 487**; *Tetranychus atlanticus* on strawberry in, **260**; sawflies on *Pinus taeda* in, **264, 265**; *Epitrix hirtipennis* on tobacco in, **223**; beneficial insects in, **219, 447, 487**; fungus infesting *Sitona hispidulus* in, **441.**
Virginia, West, mites on apple in, **101**; clover pests in, **187**; Nitidulids and oak wilt fungus in, **17.**
virgulana, Pardasena.
viridigriseus, Macrosteles.
viridis, Agrilus; *Sminthurus.*
viridissima, Tettigonia.
viridula, Nezara.
Virus Diseases (of insects), in wheat gall-midges, **79**; in sawflies, **460, 485, 497**; in Lepidoptera, **3, 27, 37, 69, 78, 86, 87, 125, 128, 173, 174, 193, 250, 289, 291, 360, 373, 386, 397, 426, 427, 428, 431, 455, 460**; in parasite of *Kotochalia junodi*, **250**; possibly disseminated by parasites of Lepidoptera, **86, 87, 360**; factors affecting pathogenicity of, **3, 198, 386, 397, 431, 485**; laboratory experiments with, **27, 37, 86, 87, 125, 173, 198, 289, 291, 427, 455, 497**; field use of, **128, 360, 427, 428, 431**; surveys of data on, **386, 459, 498.**
Virus Diseases (in plants*), Aleyrodid transmitting, **275, 497**; relation of Aphids to, **15, 16, 18, 19, 31, 51, 52, 53, 143, 144, 147, 155, 196, 199, 200, 202, 206, 256, 257, 258, 288, 307, 330, 354, 400, 455, 477, 492, 493, 495, 496, 506**; relation of Cicadellids to, **17, 18, 31, 35, 36, 80, 146, 174, 444, 445, 453, 470, 477, 492, 493, 494, 496, 497**; apparatus for injecting virus causing, into Cicadellids, **16**; transmitted by Coleoptera, **15, 16, 144**; transmitted by *Delphacodes striatella*, **453**; relation of *Liriomyza langei* to, **497, 498**; relation of mealybugs to, **112, 113, 163, 210, 211, 254, 417**; Orthoptera transmitting, **18, 248**; transmitted by *Piesma quadratum*, **67**; relation of mites to, **70, 179, 388, 492**; surveys of data on transmission of, by arthropods, **255, 498.**
visci, Carulaspis.
Vitamins, in diet for *Platyedra gossypiella*, **186.**
viteana, Paralobesia.
vitifoliae, Phylloxera.
vitis, Anystis; *Typhlodromus* (see *T. aberrans*).
vitrea, Chalioides.
vittata, Acalymma; *Clastoptera* (see *C. saint-cyri*).
vittatus, Cirrospilus; *Collops.*
Voandzeia subterranea, Bruchid on, in Ghana, **416.**
vosseleri, Lygus.
Vossia cuspidata, Lepidoptera infesting, in Uganda, **303.**
vulgaris, Chrysopa; *Melolontha* (see *M. melolontha*); *Systoechus*; *Vespula.*
vulgatissimus, Taeniothrips.

W.

Walnut, *Hyphantria cunea* on, in Yugoslavia, **3**; *Eulecanium corni* on, in France, **283**; pests of, in U.S.A., **348, 429**; schradan residues in nuts of, **348.**
Washington, *Choristoneura fumiferana* on conifers in, **488**; thrips on Easter lily in, **235**; orchard pests in, **59, 89, 90, 217, 428, 431**; wireworms in, **187, 309, 450**; relation of Cicindelids to bee pollinating lucerne in, **348, 349.**
Water, Hot, treatment of planting material of strawberry and black currant with, against mites, **70**; insecticides in, for treating bulbs against *Merodon equestris*, **465.**
Water-nut (see *Trapa bispinosa*).
Watermelon, *Dacus cucurbitae* on, in Hawaii, **508**; *Tetranychus telarius* on, in Jordan, **507**; *Melanoplus differentialis* transmitting virus of, in U.S.A., **18.**
watersi, Diparopsis.
Wattle (see *Acacia*).
wayi, Pseudotheraptus.
Wesmaelius quadrifasciatus, predacious on *Chermes piceae* in Austria, **201.**
Western Cherry Fruitfly (see *Rhagoletis cingulata indifferens*).
Western Corn Rootworm (see *Diabrotica virgifera*).
Western Hemlock (see *Tsuga heterophylla*).
Western Hemlock Looper (see *Lambdina fiscellaria lugubrosa*).
Western Subterranean Termite (see *Reticulitermes hesperus*).

* These references are also indexed under the individual plants infected.

Wheat, *Hylemyia coarctata* on, in Britain, **168–170, 302, 465**; pests of, in Canada, **21, 22, 388, 389, 482, 492**; *Pseudonapomyza atra* on, in Egypt, **24**; *Oria musculosa* on, in France, **205**; Cecidomyiids on, in Germany, **78**; *Syringopais temperatella* on, in Israel, **418**; *Nysius huttoni* on, in New Zealand, **372**; *Hemitrama bykovi* on roots of, in Turkey, **152**; pests of, in U.S.S.R., **80, 81, 286, 287**; pests of, in U.S.A., **19, 122, 178, 179, 309, 312, 341, 440, 450**; Aphid-borne virus disease of, **19**; *Aceria tulipae* transmitting virus diseases of, **179, 388, 492**; time of sowing, in relation to *A. tulipae* and diseases, **388**; used for rearing Cicadellid vector of clover virus, **146**; investigations on injury and losses caused by pests of, **178, 341, 372, 465**; studies on *Cephus cinctus* and varieties of, **389, 482**; hydroponic culture of, for experiments with *Mayetiola destructor*, **446**.

Wheat (Stored), pests in, **133, 161, 162, 173, 208, 209, 262, 285, 333, 334, 392, 471**; effects of moisture content and ventilation on insect infestation of, **471**; fungi associated with *Calandra granaria* in, **442, 443**; movements of insects in stacked bags of, **161, 162**; water-trap for detecting insects in, **392**; experiments with fumigants for, **88, 324, 334**; treatment of, with insecticide dusts, **133, 285**; (seed), effect of methyl bromide on germination of, **324**; insecticide treatments of, against field pests, **285, 286, 450, 451**.

Wheat Bulb Fly (see *Hylemyia coarctata*).

Wheat Gall-midges (see *Contarinia tritici* and *Sitodiplosis mosellana*).

Wheat Stem Sawfly (see *Cephus cinctus*).

Wheatfeed, used for rearing Coleoptera, **64, 65, 172, 173, 240**.

White-pine Weevil (see *Pissodes strobi*).

Whitefly, Tobacco (see *Bemisia tabaci*).

williamsi, Cryptophlebia.

Willow, pests of, in Britain, **457**.

Willowsia platani, Bdella depressa predacious on, in Illinois, **47**.

wilsoni, Platypus.

Wind, effects of, on dispersal and activity of insects, **67, 168, 486**; dissemination of *Tetranychus telarius* by, **103, 104**; influence of, on sprays, **368**.

Winter Moth (see *Operophtera brumata*).

Winthemia occidentis, introduction of, into Newfoundland against *Lambdina fiscellaria*, **128**.

Wireworm, Eastern Field (see *Limonius agonus*).

Wireworm, Gulf (see *Conoderus amplicollis*).

Wireworm, Southern Potato (see *Conoderus falli*).

Wireworms, crop rotations and soil types in relation to, **309, 384**; insecticide treatments against, **21, 38, 63, 130, 178, 186, 187, 271, 282, 450, 480**; resistance to insecticides in, **63**.

Wisconsin, pests of conifers in, **183, 265, 486**; pests of leguminous plants in, **50, 228**; maize pests in, **91, 93**; parasite of *Pristiphora erichsonii* in, **183**.

Wistaria, new Tetranychid on, in North Carolina, **261**.

woglumi, Aleurocanthus.

Woodpeckers, destroying *Agrilus anxius*, **270**.

Woolly Aphis, Balsam (see *Chermes piceae*).

Woolly Apple Aphis (see *Eriosoma lanigerum*).

Wyoming, *Epitrix tuberis* on potato in, **340**.

X.

Xanthoatomus (see *Trichogramma*).

xanthomelaena, Galerucella (see *G. luteola*).

Xanthopimpla stemmator, parasite of *Cryptophlebia williamsi* in Mauritius, **421**.

Xenocrepis pura, bionomics of, parasitising *Ceutorhynchus assimilis* in Idaho, **382**.

Xenotracheliella inimica, predacious on *Matsucoccus resinosae* in New York, **259**.

Xyleborinus (see *Xyleborus*).

Xyleborus, infesting timber in West Africa, **408**.

Xyleborus fornicatus, symposium on, on tea in Ceylon and India, **113**.

Xyleborus tsugae, in softwood logs in British Columbia, **265**.

Xylene, as solvent in emulsion concentrates, **185, 325**.

Xylocoris flavipes, in stored groundnuts in Nigeria, **273**.

xylophagorum, Pachyceras.

Xyloterinus politus, infesting windthrown trees in New York, **126**.

Xylotrechus colonus, treatment reducing infestation of birch logs by, in New York, **126**.

Y.

yagouae, *Bruchobius*.
Yeast, in media for rearing *Drosophila*, **132, 352;** in food for *Hylotrupes bajulus*, **118.**
Yeast Hydrolysate, as food or spray attractant for fruit-flies, **184, 446.**
Yemen, *Schistocerca gregaria* in, **504, 505.**
Yew (see *Taxus baccata*).
yothersi, *Oligonychus*.
youngana, *Cydia* (*Laspeyresia*).
ypsilon, *Agrotis*.
ypsilon-griseus, *Solubea*.
Yucca filipendula, value of, as food-plant for rearing *Aonidiella aurantii* and its parasites, **393.**
Yugoslavia, *Aphis fabae* and virus disease of beet in, **288;** forest pests in, **2, 3, 287, 288, 289, 329, 397;** pests of fruit trees in, **3, 4, 5, 287, 288, 397;** pests of lucerne in, **3, 4, 230;** *Dacus oleae* on olive in, **5;** pests of stored products in, **5, 287;** beneficial insects in, **4, 231, 288, 397.**
yumensis, *Eotetranychus*.

Z.

Zanzibar, Aphids of, **213;** *Cryptotermes dudleyi* in, **503;** *Pseudotheraptus wayi* on coconut in, **413–415;** *Scolia ruficornis* introduced into Samoa from, **106.**
zea, *Heliothis*.
Zeadiatraea grandiosella (on maize in U.S.A.), feeding sites and winter mortality of larvae of, **100, 385;** parasite of, **100;** insecticides against, **219.**
zealandica, *Costelytra*.
Zelus exsanguis, bionomics and rearing of, in Ontario, **133.**
Zelus longipes, predacious on *Saccharosydne saccharivora* in Guadeloupe, **135.**
Zenillia caesar, effect of pH in host gut on eggs of, **192.**
Zenillia longicauda, parasite of *Ennomos quercinaria* in Germany, **78.**
Zenillia nemea, parasite of *Ennomos quercinaria* in Germany, **78.**
Zigzag Clover (see *Trifolium medium*).
Zinc Ethylenebisdithiocarbamate, compatibility of insecticides with, in sprays for cacao, **107.**
Zinc Metarsenite, as wood preservative against termites, **199.**
Zinc Oxide, in spray and dust mixtures for *Citrus*, **233, 274.**
Zinc Sulphate, acaricidal effect of sulphur in spray for *Citrus* containing, **274.**
zinckenella, *Etiella*.
Zineb (see Zinc Ethylenebisdithiocarbamate).
Zinnia, susceptible to virus disease of *Capsicum* in Florida, **15.**
zonellus, *Chilo*.
Zonocerus variegatus, on *Cola* in French West Africa, **407.**
Zootermopsis nevadensis, influence of humidity on, **459.**

NOTICES

Secretaries of Societies and Editors of Journals willing to exchange their publications with those of the Institute are requested to communicate with the Director. Authors of papers on economic entomology, whether published in entomological journals or not, are invited to send reprints to the Director for notice in the *Review*.

The Executive Council of the Commonwealth Agricultural Bureaux is a signatory to the Fair Copying Declaration, details of which can be obtained from the Royal Society, Burlington House, London, W.1.

The Annual Subscription, *in advance*, to a volume of the *Review* Series A (Agricultural) is 60s. post free; Series B (Medical and Veterinary), 30s. post free. Prices of Back Volumes on application.

Orders and Subscriptions should be sent to the Director, Commonwealth Institute of Entomology, 56, Queen's Gate, London, S.W.7, or through a bookseller.

Printed in Great Britain by The Eastern Press. Ltd., London and Reading